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The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

Published Every Thursday TULSA, OKLAHOMA, FEBRUARY 6, 1930 $6.00 a Year

HUGHES Rock Bits and CONES

~have played a major part in establishing the rotary method of drilling ~~~ throughout the oil fields of the world~~~

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Advertisers' Index on Page 25 Table of Contents on Page 26

Be sure—use CHAPMAN VALVES

The engineer who specifies Chapman Valves for a pipe line, has practically eliminated every element of uncertainty. He *knows* how these valves will perform. He *knows* that valve trouble or high maintenance will never be a factor in the operation of that pipe line.

This is equally true in the production field. Chapman Drilling Valves have long been preferred equipment at the well head. And in the refinery, Chapman Refinery Valves, proof against highest temperatures and pressures, are depended upon for sure-fire service. For severe conditions these valves are cast of Chapman Chrome Nickel Steel (stronger than forged steel).

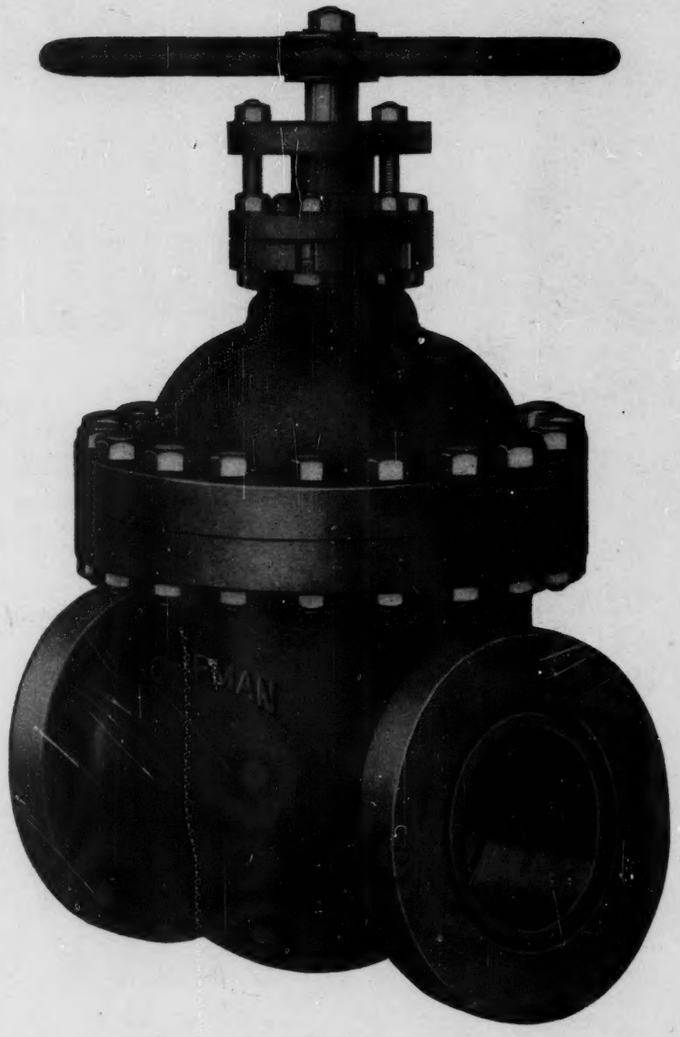
There is a Chapman distributor in your territory.

The Latest Valve Advancement

NITRALLOY

This new valve mounting has a surface harder than glass, immune to abrasion and temperature effects. Valves trimmed with it give many times their former service life.

Nitralloy can now be obtained exclusively in Chapman iron and steel body valves. Write us for the Nitralloy booklet.



The Chapman Valve Manufacturing Co.

Indian Orchard, Mass.

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Houston	Pittsburgh	San Francisco	New York
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Distributors: Wagner Supply Co., Fort Worth

Walworth means QUALITY in Bronze, Iron Body and Steel Valves

• Walworth's leadership in the design and manufacture of quality valves is not limited to a few specialties in any one line. • You will find valves of outstanding excellence in every line that Walworth makes, and for all temperatures and pressures, whether your requirements call for iron, bronze or steel. • • Wherever your specifications are based on particularly difficult conditions of service, you are safe in selecting the valve recommended by Walworth engineering experience for just that kind of job. • And you'll find it in stock at the warehouse of the nearest Walworth Distributor. •

Specify WALWORTH VALVES FITTINGS AND TOOLS *for*

OIL

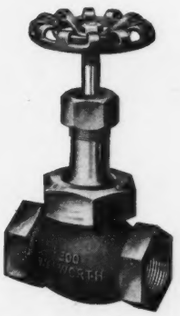

FIG. 207J. GLOBE

WALWORTH 300 LB. "RR" BRONZE GLOBE VALVE

IRON SEAT WRENCH

This 300 lb. Walworth valve has thick walls of hard bronze and an ample thread chamber to enable it to withstand expansion and contraction. The SIGMALLOY 222 (a nickel alloy) seat and disc combat the corrosive elements in oil and are easily removable.

FIG. 207K. ANGLE

WALWORTH

Walworth Company, General Sales Offices: 51 East 42nd St., New York
Plants at Boston, Mass.; Kewanee, Ill.; Greensburg, Pa.; and Attalla, Ala.
Walworth Company Limited, 620 Cathcart St., Montreal, P. Q.
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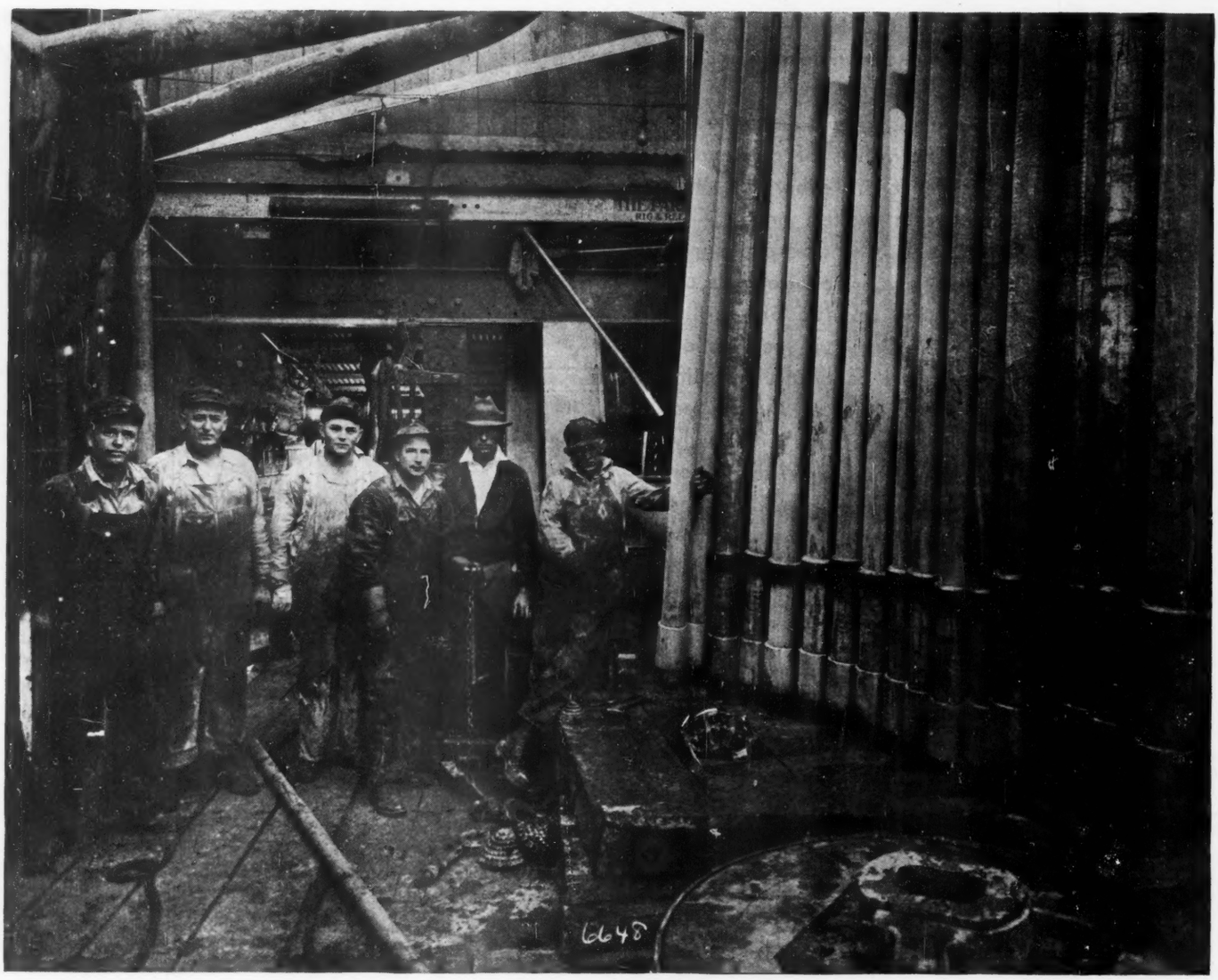
. . . Distributors in Principal Cities of the World . . .

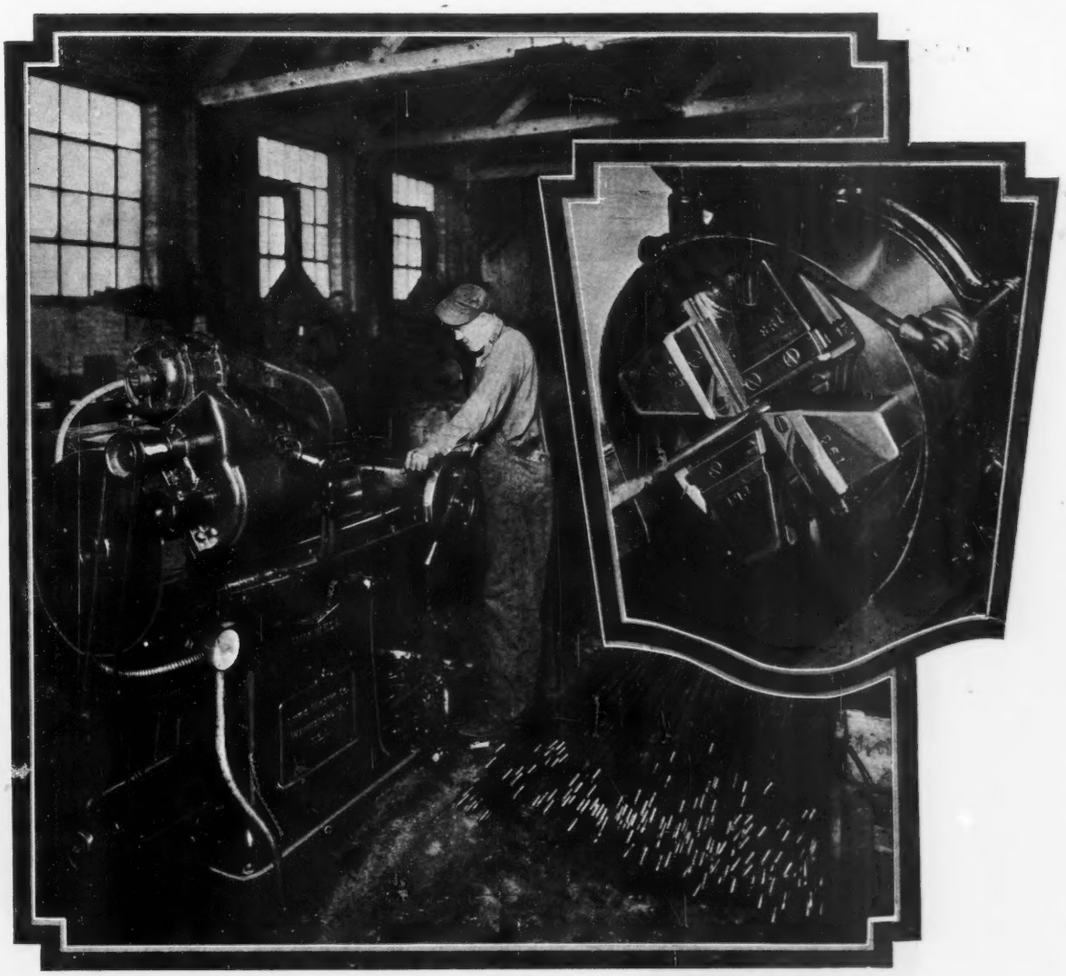
The Oil and Gas Journal, issued weekly by The Petroleum Publishing Company, 114-116 West Second Street, Tulsa, Oklahoma. Subscription price $6.00 a year; 15 cents a copy. Entered as second-class mail matter December 15, 1911, at the post office at Tulsa, Okla., under the Act of March 3, 1879.

Southern Drilling Co. are Boosters for Spengler Joints



HERE are some Southern Drilling boys who endorse Spengler Joints. Left to right—Tom Collins, backup man; John Troyer, fireman; Chick Daily, pipe racker; C. A. McDowell, derrick man (standing with hand on pipe); W. D. Herrell, driller (hand on brake); W. H. Bradler, tool pusher. Those who do the work know the value of quality tools.

SPENGLER TOOL COMPANY
OKLAHOMA CITY, OKLA.



LANDIS TRADE MARK

WHETHER your requirements are ten threads a day or ten thousand—*Accuracy* and the *Cost per piece* determine the worth of a threading machine.

The Landis Bolt Threading Machine is accurate because of its sturdy construction and the free cutting action of the patented Landis chaser. It is easily set up—it is fast in operation and owing to the long life of the Landis chaser, extremely economical in tool cost.

Catalogue No. 32, "Landis Threading Machinery", will be sent upon request.

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"For every joint on every line"

Why not save for dividends the gas, oil and water that leak from pipe lines—with 100% leak-proof Victaulic Couplings? Installation costs are low.

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For all sizes of steel, wrought iron, cast iron and spiral weld pipe—any pressure. Mail the coupon for detailed information.

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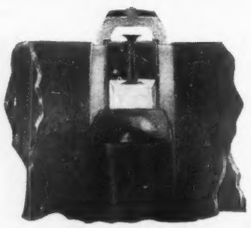

"For every joint on every line"

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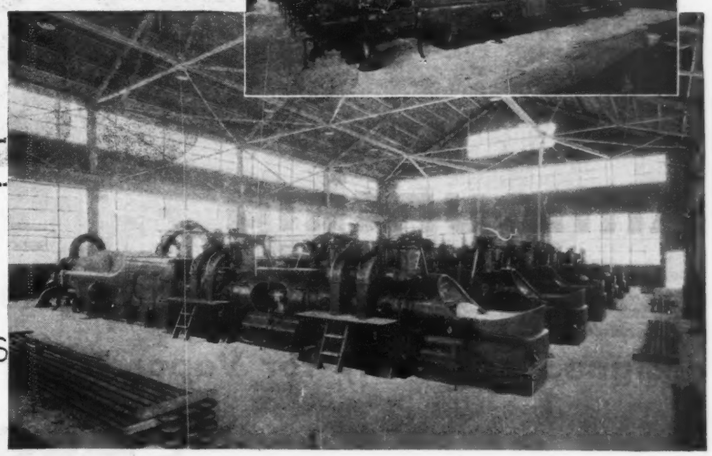
Please send me Victaulic Bulletin No. 1

Name.....

Address.....

Three Worthington 22-inch x 36-inch Twin Tandem Gas-engine-driven Gas Compressors at the Bivins Station of the Amarillo to Denver Pipe Line. Installed by Ford, Bacon & Davis, Inc.



Gas from Amarillo to Denver . . . pumped by Worthington Gas-engine-driven Compressors

NATURAL gas in Denver . . . from the Amarillo Fields . . . is a reality. A new industrial era has been opened for that city and the intermediate areas served by this great pipe line.

The gas is pumped by three Worthington Twin Tandem Gas-engine-driven Compressors in the Bivins Station at Channing, Texas. Each of these units develops 1,000 horsepower and has a capacity of 33,000,000 cubic feet per 24 hours. Additional Worthington equipment in this station consists of three Single Recompressor Engines of 170 horsepower each.

Canyon Station, near Model, Colorado, is now completed and is equipped with three similar main units of 37,000,000 cubic feet per 24 hours each.

Engineering and construction work on the line and stations was handled under the supervision of Ford, Bacon & Davis, Incorporated, New York.

Construction and operating engineers have found that, as the oldest builder of gas engines in the United States, Worthington draws upon a wealth of experience which makes reliable operation and low-cost maintenance a certainty.

Write for Bulletin S-550-B1, describing in detail Worthington Horizontal Four-cycle Double-acting Gas-engine-driven Gas Compressors

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PUMPS
COMPRESSORS
Stationary and Portable
CONDENSERS
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DIESEL ENGINES
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EGR-4A

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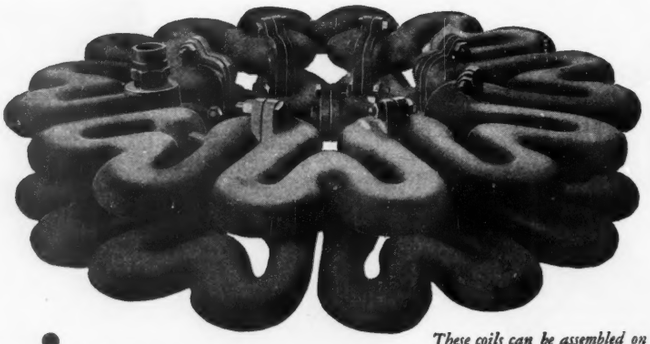
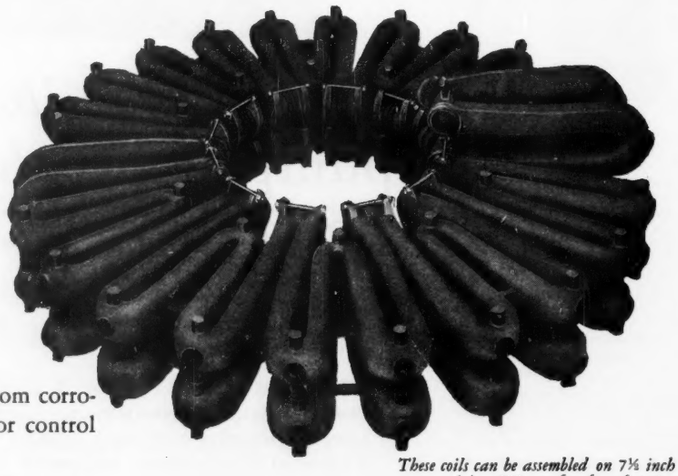


These coils can be assembled on 6¼ inch centers giving 30.5 sq. ft. of surface per coil for 5 ft. or 6 ft. towers.

Announcing

New **STERLING** "Clover-Leaf" **SECTIONS**

designed especially for Vapor Tower Knock-back Coils



These coils can be assembled on 7½ inch centers giving 102 sq. ft. of surface per coil for 8 ft. towers.

OUR latest contribution to modern Refinery equipment is designed to give greater efficiency in condensing and to attain freedom from corrosion difficulties in the reflux coils or control heads of vapor towers.

This new STERLING Clover-Leaf Section is of unit construction, and can be readily assembled or disassembled to give whatever surface the Refinery Engineer may require. The smooth surface of the Section makes cleaning remarkably easy in towers where coke deposits may be encountered. The Section will go through an 18-inch manhole, so that Sections can easily be assembled in existing towers.

• • •

Cast from ARCO Metal, the corrosion-resisting iron of uniform mixture, the STERLING Clover-Leaf Sections assure the greatest freedom from pitted, leaky coils throwing color and end-point off, and shut downs for replacements.

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THE CELEBRATED SKIP TOOTH DIE

(Genuine Nye)

REG. U. S. PAT. OFFICE

A LETTER FROM HARRY G. NYE

TO THE OIL MEN OF THE U. S. A.

ABOUT THIS SEAT BUSINESS

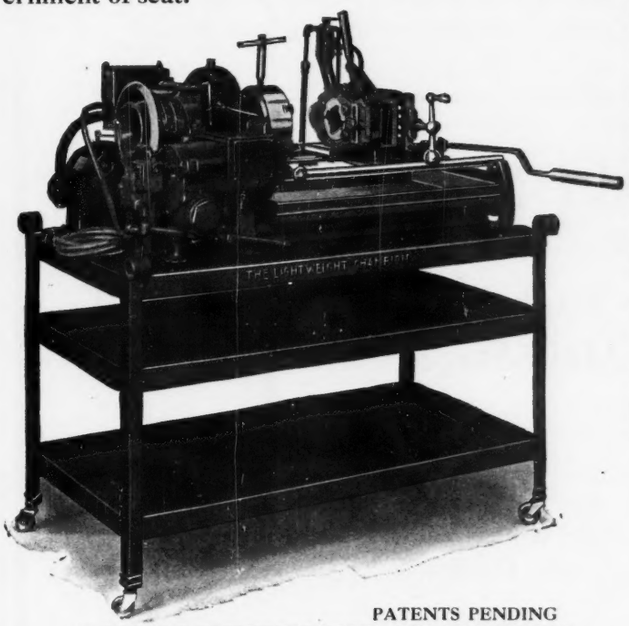
FRIENDS:

There has been a good deal of argument down at Washington lately as to what a lady should sit on—whether she should sit on the left or sit on the right. Personally I think she should sit on the right until she gets tired, and then sit on the left if she wants to.

That's her affair, and a personal matter, and I don't see why anybody should drag in precedents, or presidents, or anybody else, or thing else, whatever. If it's her seat she should stand up for it, or sit down for it, or whatever she thinks will be most comfortable.

It seems to me that the government has other more important matters to settle right now than whether some lady should sit on some gentleman's right hand or on his left hand. If the gentleman doesn't mind, I don't see why she shouldn't if she wants to.

My sympathy is all with the lady, whose seat has been discussed a great deal more than is necessary, or nice. I was taught in school that Washington was a seat of government, but now Washington seems to be a government of seat.



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"THE LIGHTWEIGHT CHAMPION"

POWER PIPE THREADING MACHINE
THREADS, CUTS OFF AND REAMS
CAPACITY ½ TO 2 INCHES

But what the people of this country are really interested in isn't the seat of government but the head. That is the part of the government that ought to be busy, but it won't be if its mind is on something else somewhere else.

Whether the seat is right or left, or up or down, doesn't make any difference to the oil men of this broad land of ours. What they want to know is who's going to build, and will they want a bathroom and a heating plant, or get along like grandpa did.

They aren't interested in the seats of the mighty, or where they put 'em. What they want is a chance to sit down once in awhile themselves. You can do it if you use Nye Tools; they do the same work so much faster and easier. The fellow who owns a good set of Nye Tools is sitting pretty.

Faithfully yours,

HARRY G. NYE.

Otherwise Known As

The Nye Tool & Machine Works

4120-30 Fullerton Avenue Chicago, Ill.

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NYE TOOLS FOR SALE BY ALL LEADING SUPPLY HOUSES

Now!

A Large Stock of GOULDS CENTRIFUGAL PUMPS *at Tulsa*

TO serve the Oil Industry more adequately, GOULDS PUMPS, Inc., has opened a branch warehouse at 213 East Archer Street, Tulsa, where a large stock of centrifugal pumps is carried for quick delivery.

Maintained primarily for the Oil Industry, this stock consists of those types which have been found, from years of experience, to be the most frequently used in refinery and natural gasoline plant service and in other oil field applications. A wide range of sizes and types enables us to fill your requirements without delay.

PUMPS
for
Low—Medium—High Pressures
Single- and Multi-Stage

When you want a pump, you usually want it in a hurry. Then call on GOULDS! Let us show you what GOULDS service really is. Remember the the new address—213 East Archer Street, Tulsa, Oklahoma.

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Seneca Falls, N. Y.

Tulsa, 213 East Archer Street · *Houston,* 1902 Second National Bank Bldg.

NEW LINES CONTEMPLATED?

Investigate the new Hill, Hubbell & Company process of mechanically coating and wrapping pipe *at the mill.* Biturine Coatings are particularly adapted for use with this process.

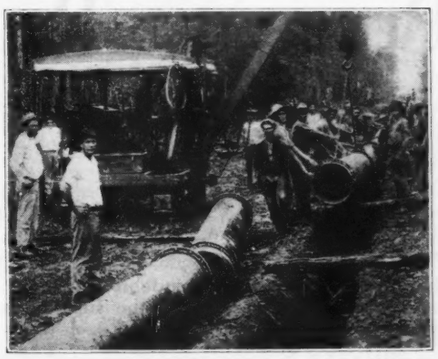
Once the pipe is in the ground

Pipe is expensive. Pipe laying is a costly operation. But the taking up and reconditioning of old pipe lines—laid without the proper protection—is the most expensive operation of all.

Once unprotected pipe has been lowered into the ground, corrosion starts—begins to levy its appalling toll.

You can protect your pipe line investment *before* corrosion sets in. For twenty-three years this organization has been developing a group of protective coatings to meet the specialized needs of the oil industry.

Biturine Coatings have earned the respect and enthusiastic endorsement of pipe line operators and their engineering staffs, for Biturine has met the exacting requirements of rigid competitive tests and is today demonstrating its superiority in thousands of miles of pipe lines.



Inter-State Gas Company Line from Monroe, La., to Natchez, Miss., Coated Outside with Biturine Enamel

BITURINE COATINGS

Biturine Enamel Biturine Enamel Primer*

Biturine Coupling Solution

Biturine Solution No. 5 Biturine 70-30

Biturine Enamel Primer can be obtained with Inhiburine

We will be glad to furnish you with records of service of Biturine coated lines upon receipt of your inquiry at any of the offices listed below.

*INHIBURINE

This entirely new inhibitor with extraordinary anti-corrosive powers is now being incorporated into Biturine Primer whenever specified. Being solvent in Bitumens it becomes an integral part of the priming coat and thereby functions as a second line of defense against corrosion should the Biturine Enamel Coating be penetrated.

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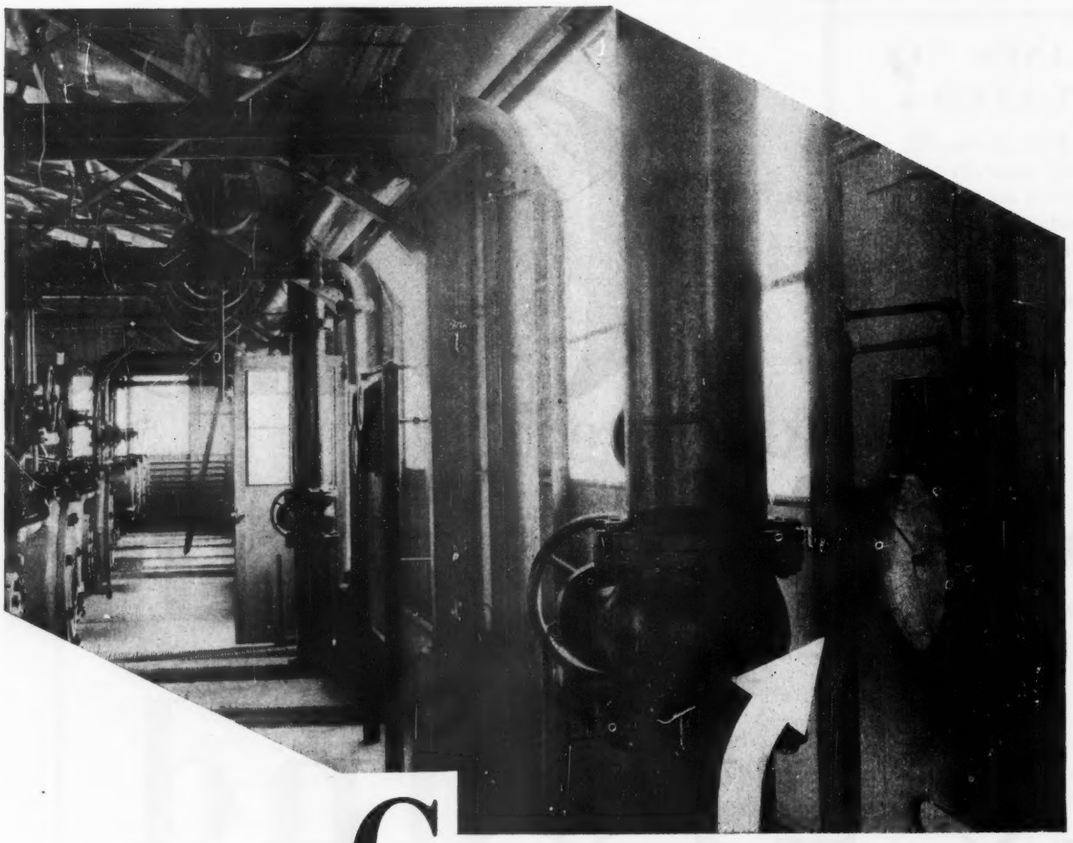

Continuous Pressure Records

Show Compressor Plant Efficiency At a Glance.

In the above photo, for example, both high and low pressures are recorded by the BRISTOL'S Gauge shown mounted on the wall. All changes which occur during the day or night are shown in detail, together with the exact time and extent of fluctuation.

Thus operatives have dependable guidance in maintaining correct operating pressures, and the superintendent or foreman is provided with a complete story of each day's work.

The BRISTOL'S Instrument illustrated is of the inverted type, equipped with two penarms for making two records on the same chart. In this particular instance, both high and low pressures are recorded, thus permitting comparative readings almost at a glance.

The simple, rugged design of BRISTOL'S Instruments assures continued accuracy and trouble-free operation. After several years operation, the Gauge described here is still functioning O.K., and has required nothing but routine attention.

For complete information about the BRISTOL'S Line of Recording and Automatic Control Instruments write or wire nearest Branch Office.

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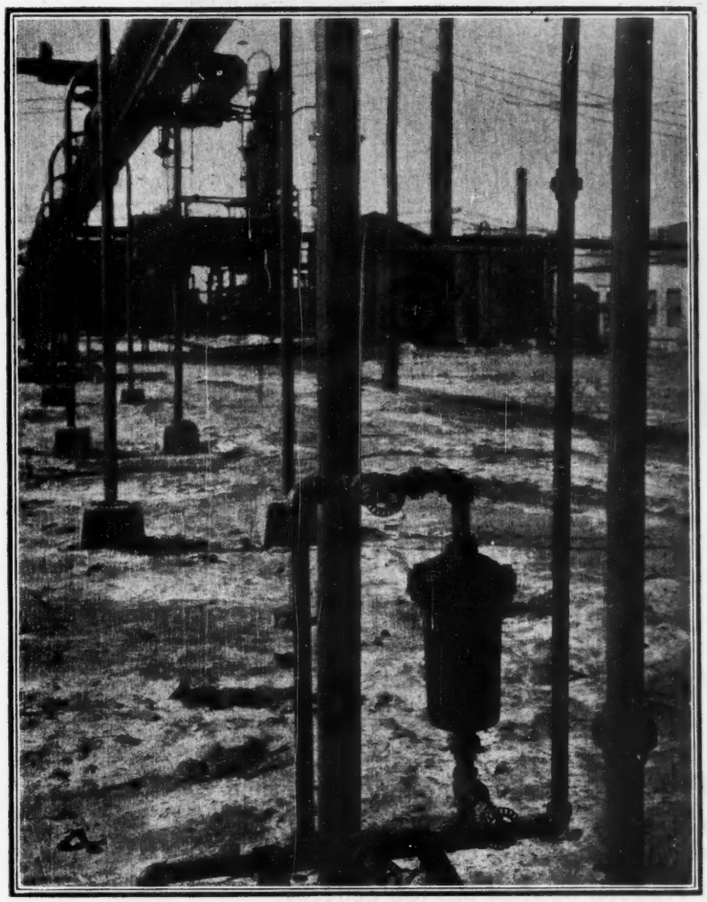
"Tie a can" to trap troubles



Armstrong trap draining steam header to pump house, Burford Refinery, Pecos, Texas. Armstrongs are also used on gasoline service.

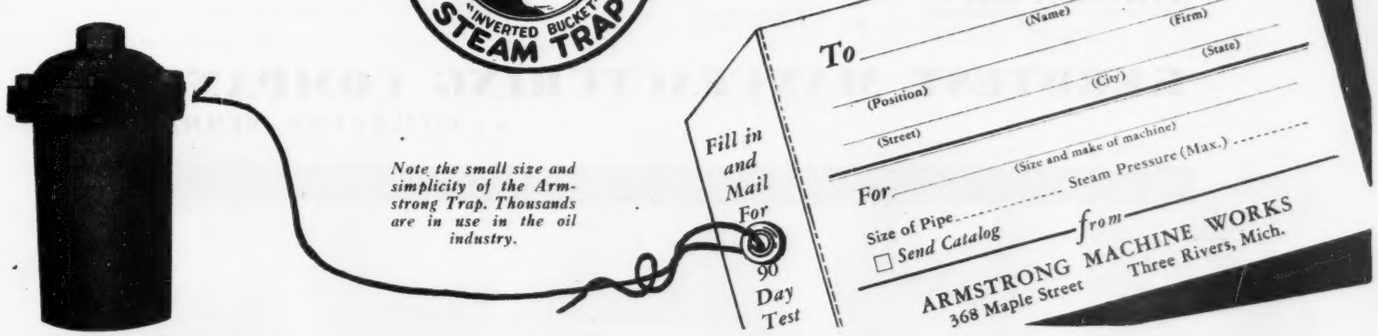
....FREE 90 day trial proves to you the attentionless operation of Armstrong inverted bucket traps....

ONE of the Armstrong trap features that have resulted in its widespread use in the oil industry is extreme reliability. For instance, a refinery that used cracked valves for years to drain a still in which a slug of water meant an explosion installed Armstrong traps after an investigation had proved their practically attentionless and positive operation.

The Armstrong trap has *all* the features that give dependability. It cannot airbind. It is self-scrubbing — the upward discharge carries out air, gases, scum and sludge with condensate. It is small in size (all working parts are inside) and can be supported by its connecting pipes. It is water sealed at all times against steam leakage. Chrome steel valves eliminate wire drawing.

These traps are made in sizes and types for pressures to 1350 lbs. and any degree superheat. The coupon below brings as many as you desire; test them 90 days; return them at our expense.

ARMSTRONG MACHINE WORKS
368 Maple Street, Three Rivers, Michigan
District Representatives in 42 Cities



Note the small size and simplicity of the Armstrong Trap. Thousands are in use in the oil industry.

Fill in and Mail For 90 Day Test

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For _____ (Size and make of machine)
Size of Pipe _____ Steam Pressure (Max.) _____
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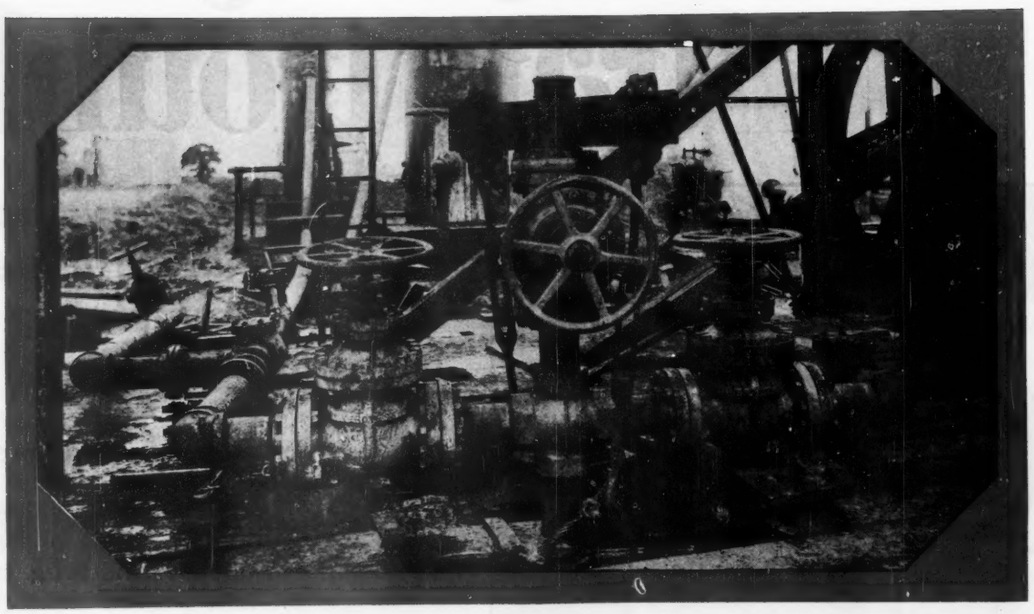

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Kerotest Equipped

Thomas Fuzzel No. 1 Indian Territory Illuminating Oil Company, Oklahoma City. Actual 24 hour oil production 44,000 barrels and 60,000,000 cu. ft. gas.

KEROTEST Products handled this job perfectly.

Every KEROTEST Product is given a more severe test in the factory before shipment than it can normally receive in the field. This test takes the guesswork out of drilling valve, flow line valve and Christmas Tree fitting purchasing—making it possible for you to buy and specify KEROTEST with the absolute assurance that it will meet any emergency.

You too can play safe by capping your next well with KEROTEST.

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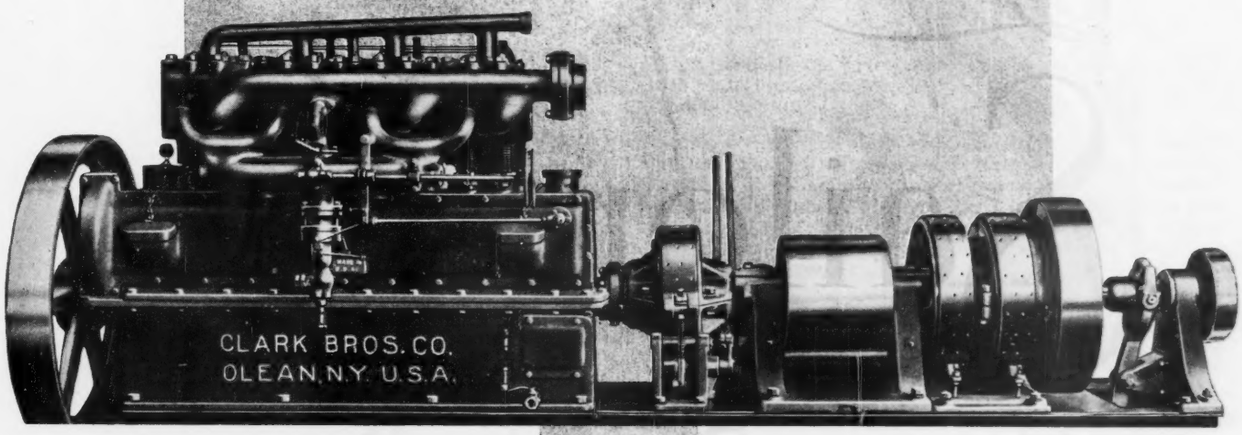
for FASTER and CHEAPER Drilling



The Clark Senior Drilling Engine..

This engine gives the desired drilling motion and furnishes ample power for all drilling operations on the largest, deepest holes. As it will maintain maximum power at maximum speed indefinitely, no time is wasted waiting for power.

Since it operates on approximately 7000 feet of gas or 75 gallons of gasoline per 24 hours, and there is no water or scale cleaning expense, operating costs are minimized.

A sturdily built, slow speed machine, enclosed, automatically lubricated, and with an exceptionally durable clutch, the Clark Senior drills hole after hole at surprisingly low cost for upkeep.

The Clark Type G 2-Speed Clutch..

This is the most costly clutch manufactured for drilling service. Since the clutch is the heart of a drilling engine, the durability of this clutch makes possible exceptional service from the Clark Drilling Engine Unit.

Features of this clutch include: Roller bearings on low-speed gears—removable liners in reverse drum and pedestal bearings—outside clutch and brake bands, radiating friction heat directly and instantly accessible—all side strain removed from engine crankshaft—correct lubrication.

Compressors and Gas Engines

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OLEAN, N.Y.

Export Office: 150 Broadway, New York City
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Warehouses: Tulsa, Okla.; McCamey and Sweetwater, Texas; Artesia, N. M.

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Sailor's Knot

Quick ... Sure and Simple

The Guiberson Tool Joint Tonq

GUIBERSON

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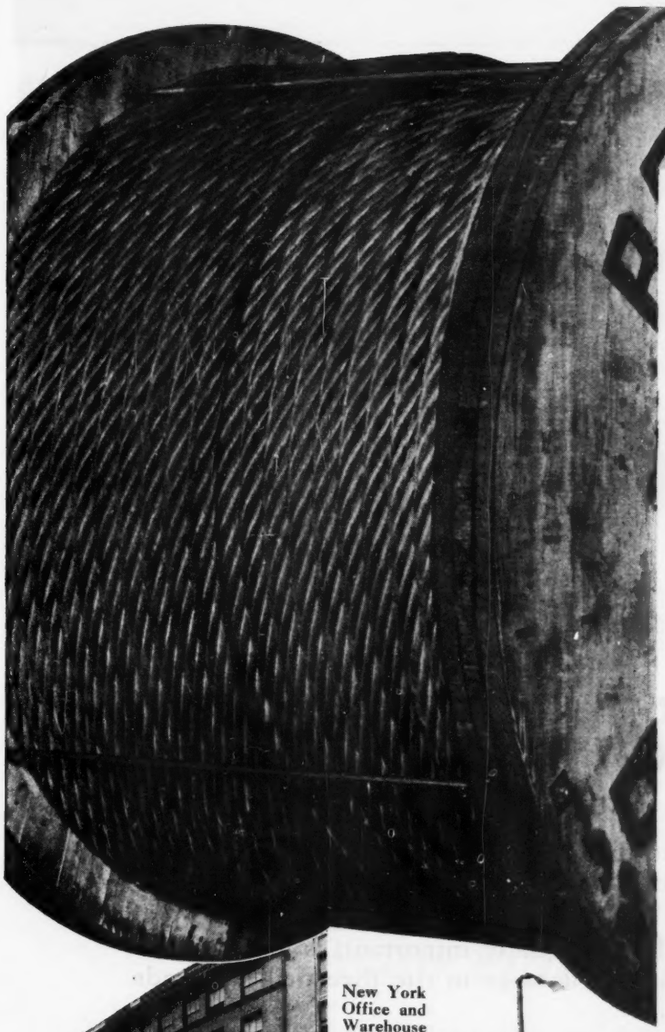

IT'S A MIGHTY BIG "OUTFIT"

which provides the petroleum industry all over the world with that vitally important part of its equipment—dependable wire line.

Two great productive factories in St. Louis and Seattle and commodious warehouses in New York, Houston and Portland, keep supply houses everywhere well stocked with B & B Cable Tool Drilling Lines, Sand Lines and Pumping Lines, and the famous Yellow Strand Rotary Lines, laid up to suit conditions in each field. You get what you want *when you want it.*

Broderick & Bascom began making wire rope in 1876, were pioneers in designing special drilling cables—pliable, easy running lines that spell speed and economy in the cable tool field; and invincible Yellow Strand Rotary Lines, supremely elastic, non-crushing, and of uniform strength.

All B & B Lines are made of wire drawn to our own specifications and tested four ways before being made into rope. Machinery of exclusive design. Workmen of ripe experience. Result: Good, uniform, dependable lines.

If you don't know name of nearest B & B Distributor, ask us. Write for catalog K-2.

Broderick & Bascom Rope Co.

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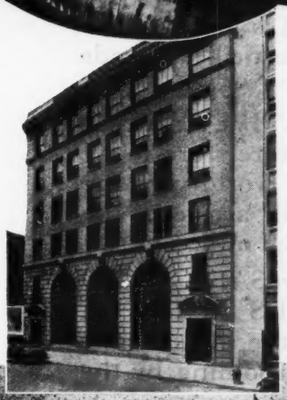
Factories: St Louis and Seattle

Warehouses: New York, Portland, Ore., and Houston, Tex.



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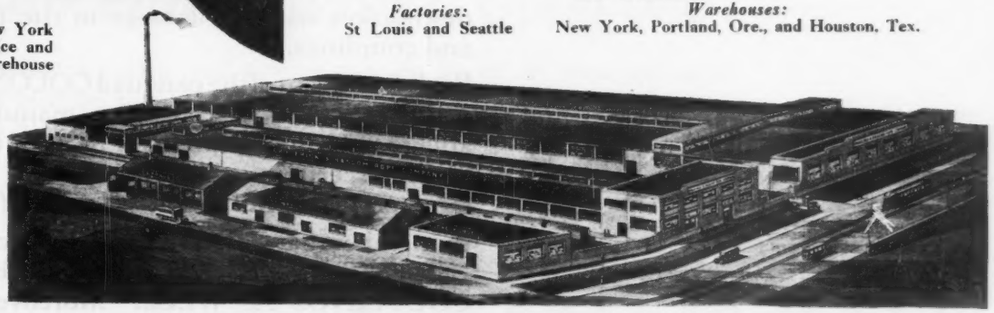

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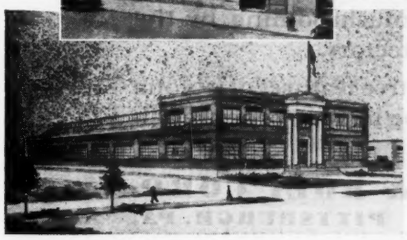

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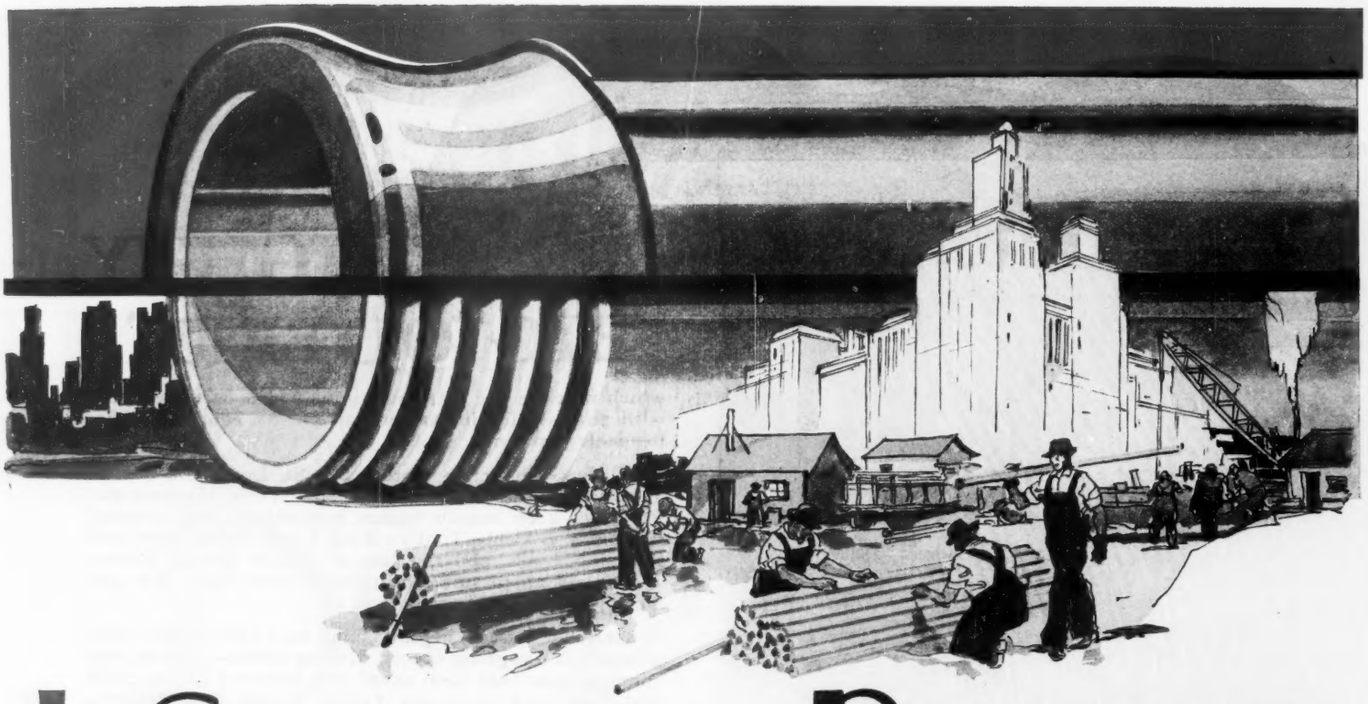


It STANDS to REASON

Making pipe to the strictest standards of workmanship is ONLY ONE HALF OF THE JOB of rendering satisfactory service to the pipe user.

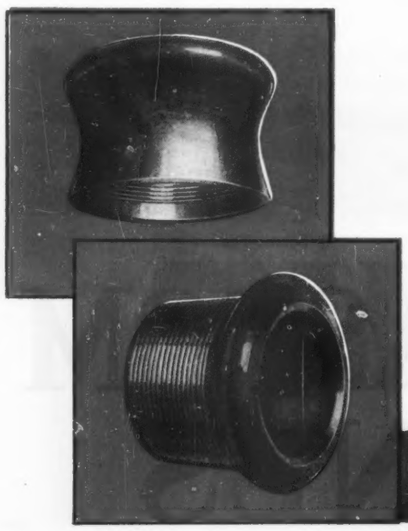
THE BIG THING, equally important, is to ship it to destination without damage to the threaded pipe ends and couplings.

With the advent of the patented COLONA PIPE THREAD PROTECTORS, leading pipe manufacturers are today able to ship their pipe to all parts of the world with the absolute certainty that every length will arrive in the same perfect condition as when it left the mill.

Remember that Colona Thread Protectors SAFEGUARD BOTH THE THREADED PIPE ENDS AND THE COUPLINGS AS WELL. Moreover the ends of the pipe are amply protected against mushrooming by the exclusive lip design of Colona Protectors.

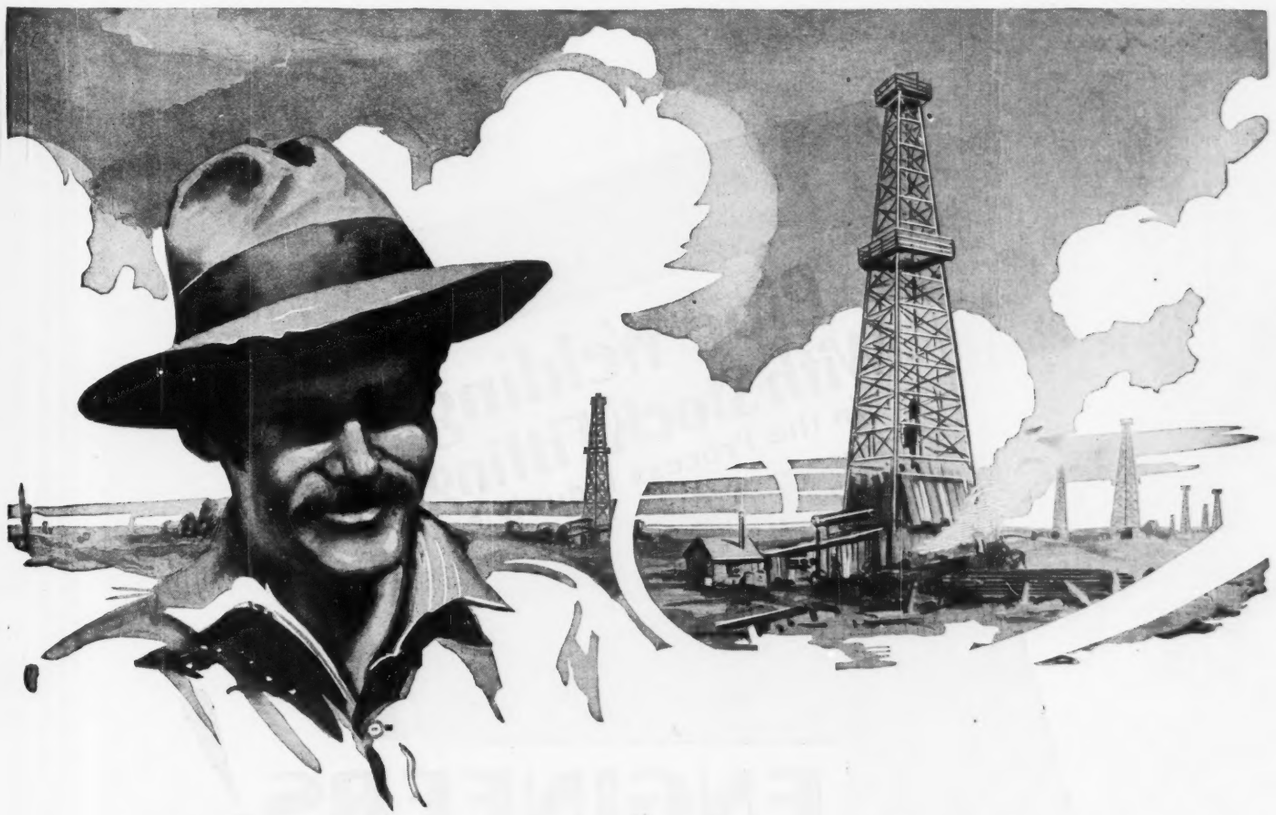
ASSURE YOURSELF of the protective features of Colona by specifying Colona Protected Pipe in your order requisitions.

PITTSBURGH SCREW & BOLT CORP.
COLONA DIVISION **PITTSBURGH, PA.**



COLONA

PIPE THREAD PROTECTORS

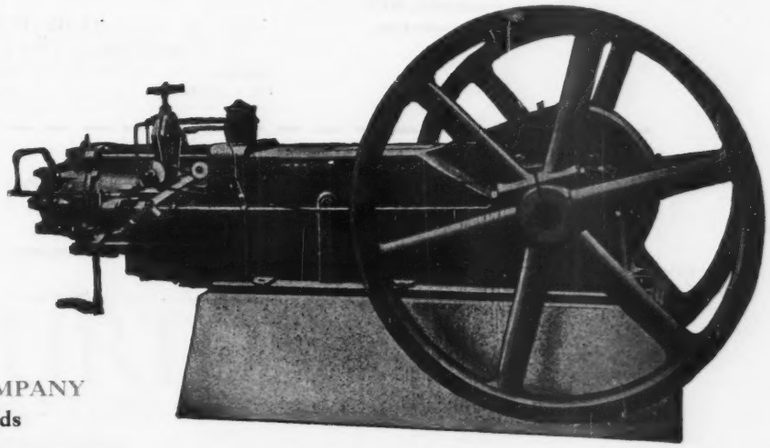


If You're Looking for an Excuse to Change Your Power Plant, Here's a Good one!

Is your present cable tool prime mover boosting footage costs instead of cutting it to the bone? Investigate the Franklin Valveless OF Oil Drilling Engine with its patented construction, its surprising simplicity, low weight and its steady stream of power ample for every drilling load. 40—50—80 H.P.—and equipped with a clutch as good as the engine!

FRANKLIN
VALVELESS ENGINE CO.
FRANKLIN, PENNSYLVANIA

The producer who bought the first Franklin Valveless Engine ever made is still buying them. Think that over and investigate Franklin Valveless Oil and Gas Engines — we like to deal with discriminating power users!



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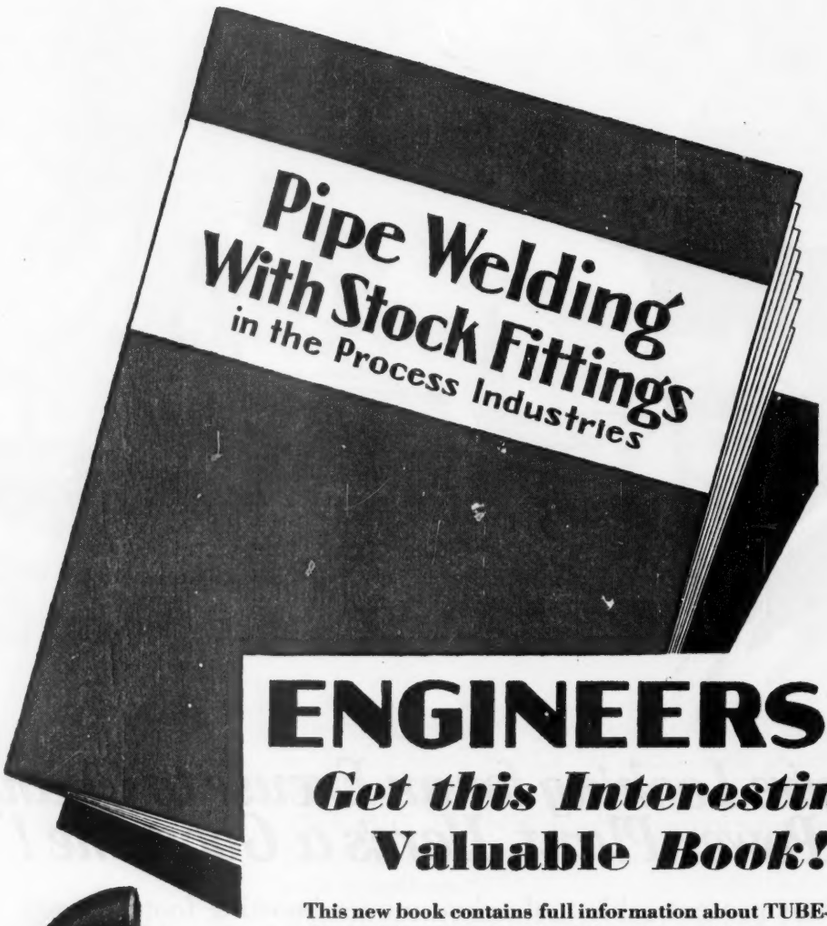

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This new book contains full information about TUBE-TURNS, the world's *only* stock fitting for pipe welding.

It tells why TUBE-TURNS are the strongest, safest, and most economical means for making all changes in direction of oil and process piping.

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TUBE-TURNS

are short-radius, non-porous pipe fittings, forged from seamless steel tubing. Uniform in wall thickness. No thinning, thickening, flattening, or buckling. Safe at *any* temperature or pressure.

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Gentlemen: Please send at once my free copy of "Pipe Welding with Stock Fittings". This request does not obligate me in any way.

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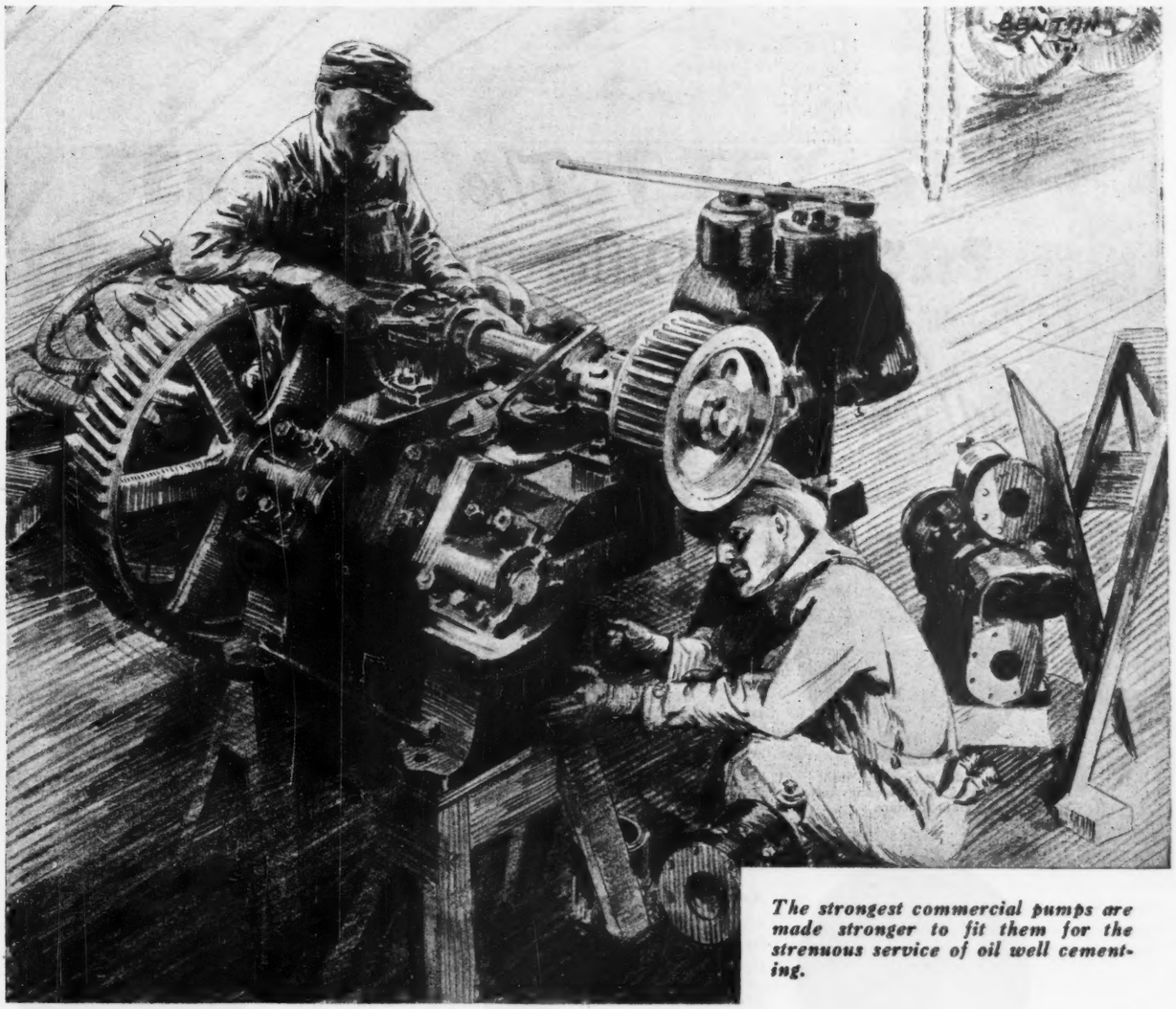

The strongest commercial pumps are made stronger to fit them for the strenuous service of oil well cementing.

In the laboratories of the Halliburton company are cabinets containing blueprint upon blueprint of equipment and methods relating to oil well cementing. . . Ideas offering even a remote possibility of success have been worked out in theory and tried out in practice. . . To render the highest type of cementing service to the oil industry, an organization of specialists is constantly engaged in research and development work. The *essence* of their efforts, entailing the expenditure of hundreds of thousands of dollars, is represented in the Halliburton Process of Scientific Oil Well Cementing.

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OIL WELL CEMENTING CO.

Duncan, Oklahoma

To those who wish to keep attuned to modern developments in cementing methods, THE CEMENTER will be mailed regularly as issued, on receipt of the coupon. Fill in and mail yours today—no cost or obligation.

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Dept. OG, Duncan, Okla.

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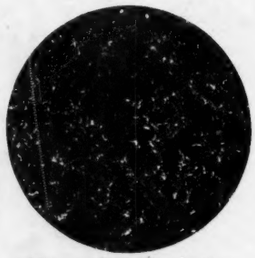
The "Inside Difference" between JONES *fully normalized, high manganese steel* SUCKER RODS and ordinary rods, as revealed by the microscope

Under the microscope, most sucker rods show a highly varying grain structure.



Micrograph of the body of an ordinary rod. Compare this with the one below.

Pictures tell the story and here's the "Jones" story in full.

An ordinary sucker rod under the microscope, shows an utter lack of uniform grain structure,—different parts of the same rod are revealed as having an entirely different metallurgical make-up . . . Therein lies the secret of the superiority of Jones High Manganese Steel Sucker Rods.

Any Jones Rod, put to the microscope test, will show a perfect, uniform grain structure from end to end,—hence their high fatigue resistance, lack of heat demarcation and unequalled record of satisfactory performance.

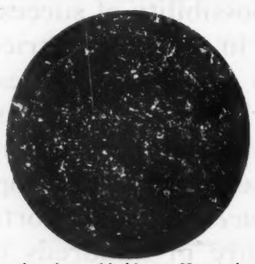
Jones Fully Normalized High Manganese Rods are the *only* sucker rods that are manufactured under full heat treatment,—the entire length of each rod is heat treated at the same time, under uniform temperature, in the world's largest sucker rod normalizing furnace . . . They are the *only* rods that can pass the uniform grain structure test,—Therefore, they are the *best* rods to use.

Write for the booklet describing this super sucker rod,—every oil man should have it.

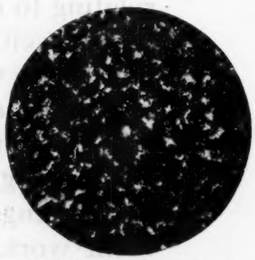
Cross-section of the metal structure of an ordinary rod. Note the difference from that above.

Forged end of the same rod with an entirely different grain structure. Note the enlarged crystals.

Another example of poor grain structure in an ordinary rod.



Compare the others with this cut. Here is the "Jones" High Manganese Rod—it shows the same, even, close grained structure throughout the rod, indicative of its strength and high fatigue resistance.

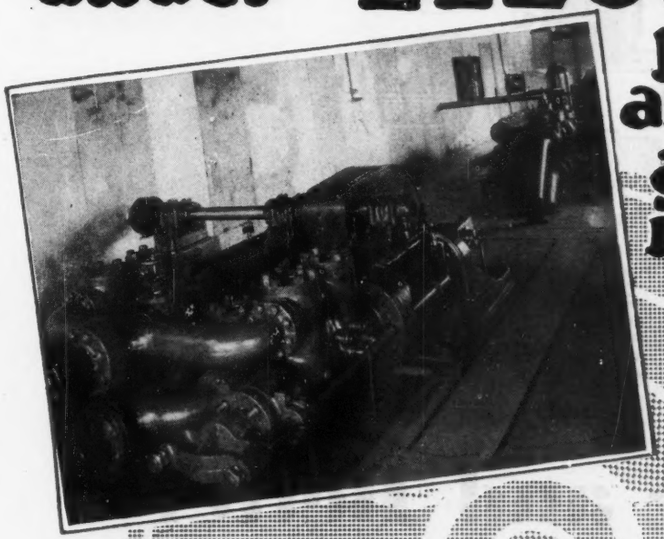


Ready-for service end of the same rod with a different grain structure from either of the above parts.

THE S. M. JONES COMPANY · TOLEDO, OHIO

Mid-Continent Office: McBirney Bldg., Tulsa, Okla.

SERVING WEST TEXAS pipe line pumping stations under ELECTRIC power are practically automatic in operation



Far-seeing executives select pipe-line routes that follow closely the power lines — even when it is necessary to lay extra miles of pipe to do so— BECAUSE electric powered pump stations

—are easier to keep clean.

—can be shut down without waste, or started again on a moment's notice.

—can be made automatic without any attendant in charge.

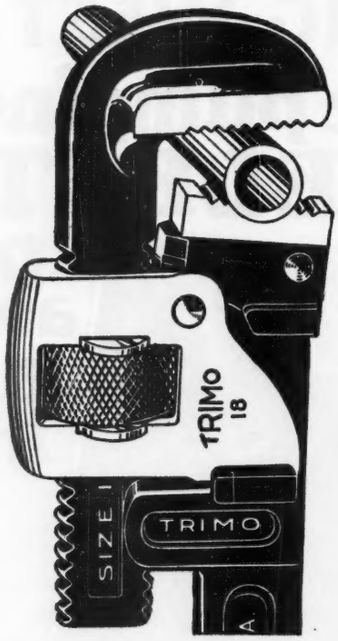
—will deliver oil at the Refineries at lower cost per barrel.

Consult our Engineers—pioneers in the application of ELECTRICITY to Oil Field Equipment

WEST TEXAS UTILITIES COMPANY

In the Land of Opportunity

General Offices Abilene, Texas



Better and Better

—a tool that has constantly gone forward in performance and popularity

Two generations of constant mechanical improvement and invention have not displaced the need for the pipe wrench. But they have opened the way for improved manufacture and stronger, longer lasting tools.

TRIMO has always been a good wrench. Today it is a better wrench.

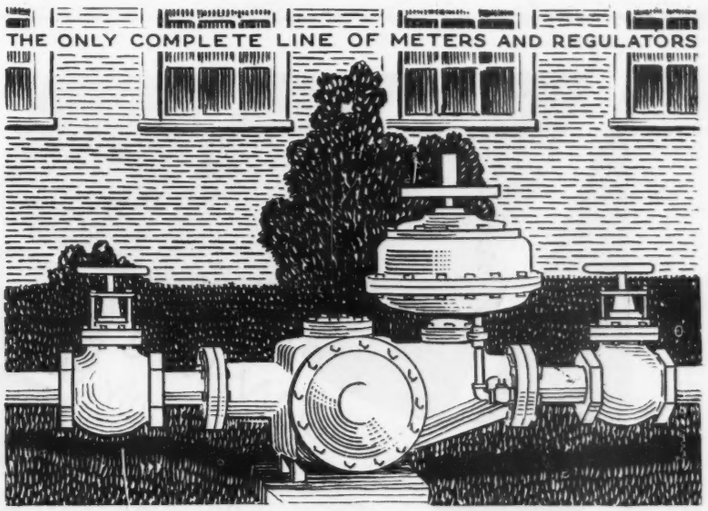
Modern methods enable us to drop forge the handle, and heat treat it for extra toughness.

Our manufacturing methods are backed up by forty years of valuable experience. Your choice of a TRIMO is backed up by forty years of constantly growing popularity.

TRIMO Pipe Wrench

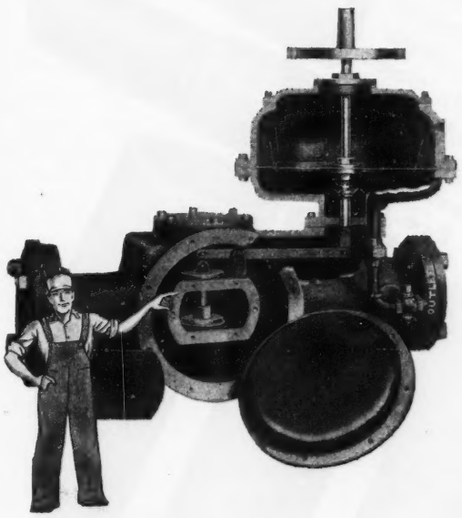
All Steel for Strength - - - - Handle Drop Forged—Not Cast

Made by TRIMONT MFG. CO., Inc., Roxbury (Boston), Mass.



FOR LOW PRESSURE REGULATION -EMCOS

"Supersensitive"—the tribute payed by gas engineers to the EMCO low pressure regulator. Long sensitive diaphragm stroke, relatively short valve stroke, permits large diaphragm area responsible for high degree of accuracy. Diaphragm type seal used in diaphragm stem—eliminates friction, pumping and chattering.



Of course the Removable valve box; One piece body casting; Interchangeability of parts; are found in EMCO low pressure regulators.

EMCO PRINCIPLES

Removable Valve Box · One Piece Body Casting
Interchangeable Diaphragm Heads
Long Sensitive Diaphragm Stroke
Relatively Short Valve Stroke

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PITTSBURGH EQUITABLE METER COMPANY

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Careful Welding
Assures Uniformly
Strong Pipe
The significance of consistently sound welds in every length of Republic Steel Pipe cannot be over-emphasized . . . for sound welds assure uniform strength, and are the backbone of reliable pipe service. Welds that do not open when the pipe is threaded. Welds that hold together when pressure is exerted either from inside or outside. Tight, strong, solidly closed welds that mean safe, leak-proof piping and lasting, trouble-free service. This is a certainty when Republic Steel Pipe is used.
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IRON & STEEL CO. YOUNGSTOWN O.
STEEL PIPE

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Refinery Section Starts on Page 128

California Holds Key to Situation

Highest daily average estimated total production in 1929, week ended Aug. 24, 2,975,435 bbls. Lowest in 1929, Dec. 27, 2,595,320 bbls.

Failure of Some Operators to Co-operate Presents Problem. Figures Show Strict Curtailment in Mid-Continent

By Andrew M. Rowley

Highest daily average estimated light oil production in 1929, week ended Sept. 14, 2,534,524 bbls. Lowest in 1929, Apr. 13, 2,142,036 bbls.

California, now probably more than ever, holds the key to the solution of the problem confronting the petroleum industry. Conservation efforts on the Pacific Coast have met with continued opposition from a few operators representing but a comparatively small part of the production. Their unwillingness to co-operate has resulted in considerable unnecessary drilling and development which is the basis of the present crisis being faced by the industry, not only in California but throughout the country. As has been stated before, the larger companies have been carrying the burden in California and have about reached the limit of patience and ability to further store crude oil and gasoline. A continuance of this condition in all probability will mean a drastic reduction in crude oil prices in California within the very near future.

Hope for relief lies chiefly in enforcement of the natural gas conservation law but opposition to this measure may prevent an early decision as to the constitutionality of the act. Issuance of a temporary injunction pending further hearings probably would aid the situation greatly. In any event it is expected definite action one way or another will be taken by the industry in California within the very near future, either in the form of a crude oil price reduction, a more effective conservation agreement, or enforcement of the natural gas conservation law through court injunction.

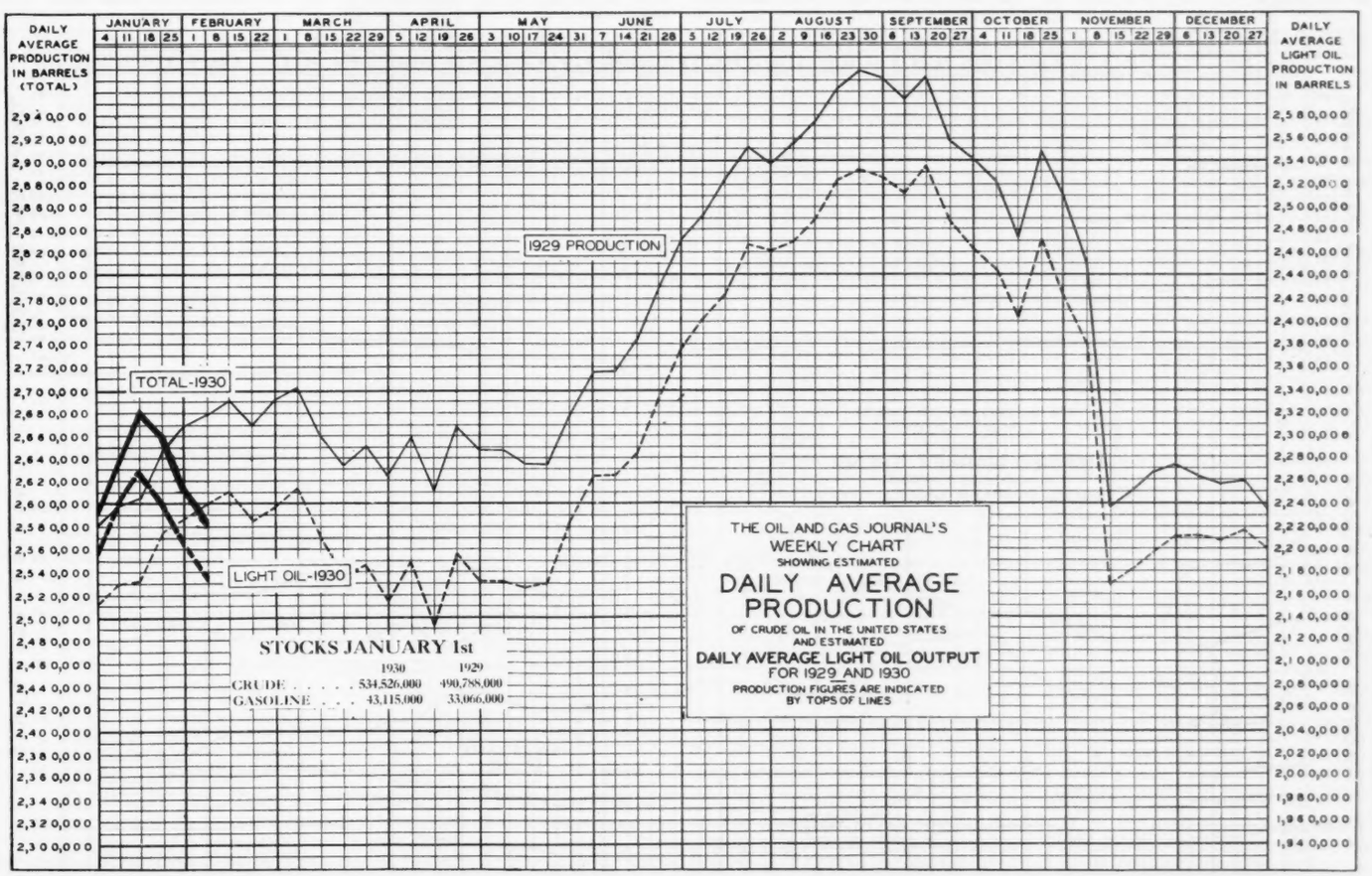
Weakness in the refined and crude oil market in California naturally is reflected in other areas of the country. Oklahoma operators have succeeded in bringing production down to the lowest point in many months and Texas operators are planning to curtail production in that State another 100,000 barrels daily. Consequently the situation in the Mid-Continent area is nothing to worry about or cause alarm and the outlook would be quite promising were the situation in California cleared up. The price question in the Mid-Continent seems to be marking time. With substantial declines in production recorded in that territory, operators feel the necessity of crude price reductions is being eliminated quickly.

PRODUCTION IN THE UNITED STATES

Estimated daily average production of light and heavy gravity oil in the United States for week ended February 1, and a comparison with the previous week follows:

	Feb. 1		Jan. 25	
	Light	Heavy	Light	Heavy
Oklahoma—				
Oklahoma City	57,165	.....	83,170	.....
St. Louis-Pearson	42,805	.....	45,785	.....
Seminole	217,660	.....	232,510	.....
Northern Miscellaneous	237,210	.....	237,315	.....
Southern Fields	56,715	.....	56,065	.....
Total Oklahoma	611,555	.....	654,845	.....
West Texas—				
Hendricks	87,905	.....	87,250	.....
Yates	141,367	.....	142,490	.....
Remainder	111,282	.....	109,182	.....
Total West Texas	340,554	.....	338,922	.....
North Louisiana	31,355	5,140	31,945	5,190
Arkansas	17,705	39,545	17,965	38,890
North Central Texas	134,420	.....	136,339	.....
Texas Panhandle	87,865	.....	88,190	.....
East Central Texas	21,957	.....	21,110	.....
Kansas	110,210	.....	110,180	.....
Total Mid-Continent Area	1,355,621	44,685	1,399,496	44,080
Gulf Coast	.....	194,027	.....	191,622
Southwest Texas	.....	65,649	.....	64,229
Eastern	140,000	.....	140,000	.....
Rocky Mountain Area	78,635	.....	72,701	.....
California—				
Santa Fe Springs	168,000	.....	170,000	.....
Long Beach	107,000	.....	105,000	.....
Huntington Beach	41,500	.....	41,500	.....
Elwood	35,000	.....	29,500	.....
Ventura Avenue	51,500	.....	51,000	.....
Seal Beach	29,000	.....	28,000	.....
Remainder of State	170,000	105,000	170,00	108,000
Total California	602,000	105,000	595,000	108,000
Total United States	2,176,256	409,361	2,207,197	407,931
Grand Total		2,585,617		2,615,128

Total Decrease, 29,511 Bbls.; Light Oil Decrease 30,941 Bbls.



Oklahoma Refined Market Marks Time

Refiners Await Further Developments in Crude and Retail Prices. Several Sellers Dumping Furnace Oils

By C. O. Willson

Refinery markets in Oklahoma (Group 3) over the past week continued to mark time.

The attitude of most of the refiners is to continue prices at their present levels if possible until there is some definite development in the general oil situation which will serve as a basis for determining the outlook for the next 30 to 60 days.

The motor fuel market has not changed from the weak position it has held for several months but many of the trade believe that prices at refineries have already discounted any possible unfavorable developments in the crude oil and retail markets. With the low of the U. S. Motor gasoline market under 6 cents this seems to be a reasonably safe prediction. Prices are now at the low point in the history of the Mid-Continent Field and if past history is of any value as a basis for predictions in the present situation the next important change in the refinery gasoline market should be upward.

Those taking this view, point to the fact that even if the crude oil reductions announced last month by several buyers becomes general, the average Mid-Continent refiner will still be operating his plant at a loss. In addition it is possible that generally lower crude oil prices will result in lower fuel oil prices or reductions in some other products and this will also tend to discount any advantage obtained from any lower raw material prices. This does not mean that these sellers are optimistically expecting a rapid gasoline price recovery. But they do not agree with the prediction coming from some sources that U. S. Motor gasoline will drop to 5 cents or less before the present slump has run its course.

REFINED MARKET BAROMETER

Continued revision downward in gasoline tank wagon and service station prices at scattered points reflects the general weakness in refinery tank car prices. The latter prices were again lowered in several refining areas during the past week and competition was keen for the small quantity of spot business available. The gasoline market situation is particularly critical in California. Natural gasoline prices were fairly firm over the week. Kerosene is sluggish except for a few points where a local demand has shown improvement. There is a disposition on the part of sellers to dump furnace oils in some consuming areas at low prices. Fuel oil and gas oil prices generally are unchanged. Steam refined stocks and bright stocks were again lowered by East Coast refiners with no changes in other areas. Neutral oils were stronger in the Gulf Coast. A better demand for wax was reported in the eastern domestic and export markets.

Mid-Continent—Gasoline market generally weak. Minor changes in natural gasoline. Furnace oil distillates weak and prices lower. Kerosene unchanged. Fuel oil and gas oil firm. No change in lubricants and wax.

East Coast—Lowering of gasoline tank wagon and service station prices weakens tank car market at refineries. Steam refined cylinder stocks and bright stocks lower. Wax more active. No change in other products.

Pennsylvania—High gravity kerosenes lower in price. Steam refined cylinder stocks and bright stocks slow. No change in other products.

Chicago—Little buying in spot gasoline market and prices generally lower. Kerosene quiet. Furnace oils weak. More fuel oil available with no change in prices.

Gulf Coast—Prices on several grades of neutral oils advanced with more active demand. Gasoline weak. Fuel oil slow.

California—Retail and refinery gasoline market weak and lower prices anticipated. Light demand for kerosene.

Other Products

Natural gasoline, kerosene, fuel oil, lubricant and wax are practically unchanged in price with little that is definite on which to base future trends. Furnace oils are weaker and are being quoted over a wide range of prices.

Natural gasolines the first of the week were available from a few sources at prices which were slightly lower than they were a week ago. Other manufacturers were continuing the prices which were effective the last of January. The expiration of contracts and the inability of buyers and sellers to arrive at a basis for new agreements has brought considerable confusion in the spot market with varying opinions expressed regarding the probable trend over the immediate future. There were some indications on Tuesday that the market especially on Grade AA would improve later in the month. One large Gulf Coast bryer is reported to be in the market for around 1,200 cars for February delivery and some of this business has already been placed. The fact that the production of this grade has been curtailed due to weather conditions is an additional factor pointing to better prices. The BB and C grades are more generally available.

Government Data

The Bureau of Mines report for December which became available last week shows that the refining industry entered the new year with gasoline storage a little more than 10,000,000 bbls. greater than on the same date last year. The storage by areas and the increase over the same date last year are given in the accompanying table (data given in barrels):

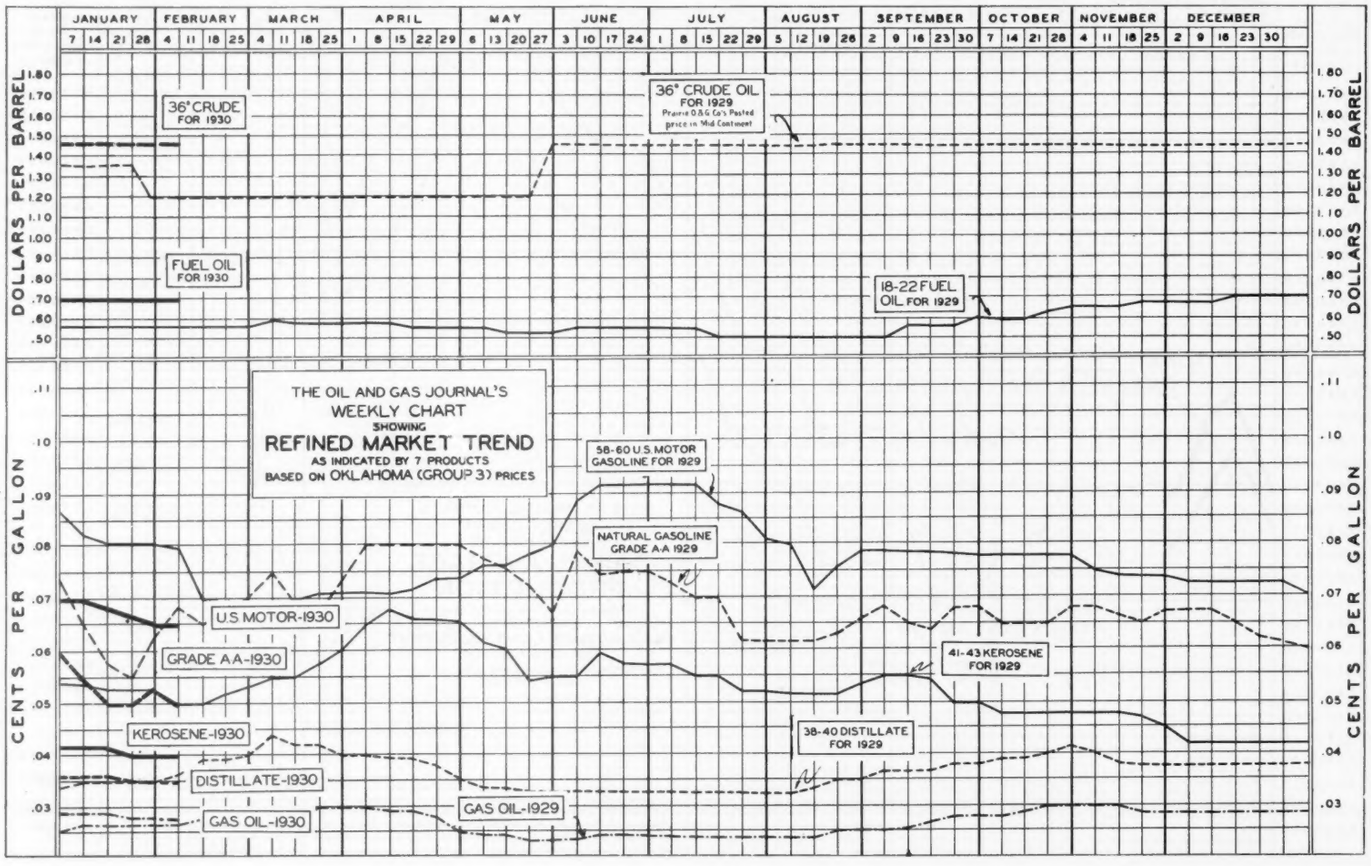
	Gasoline stocks Jan. 1, 1930	Increase over Jan. 1, 1929
East Coast	6,063,000	526,000
Appalachian	1,383,000	154,000
Ind., Ill., Ky.	5,634,000	535,000
Texas	6,648,000	1,785,000
La.-Ark.	2,145,000	*13,000
Rocky Mountain	2,334,000	766,000
California	14,785,000	5,864,000
United States	43,115,000	10,049,000
Texas Gulf Coast	5,313,000	1,250,000
Louisiana Gulf Coast	1,838,000	141,000

*Decrease.

This table on stocks checked against gasoline output for the two yearly periods will show in general that the greatest increase in inventories has come from the areas with the largest increase in production. For instances, the increase in California output for 1929 averaged about 40 per cent over 1928 and it will be noted that the refiners in that State had more than 50 per cent of the increase in the gasoline stocks.

Unfortunately these West Coast operations have to be taken into considera-

(Continued on Page 133)



Tariff Advocates Heard in Washington

Present Views at Meeting in Caucus Room in House Office Building and Committee Named to Meet President Hoover

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Feb. 4.—In the caucus room of the House Office Building Wirt Franklin today presented the case of petroleum in the interest of a tariff on importations which he said should be $1 a barrel on crude and 50 per cent ad valorem on refined products.

For an hour and a half the Oklahoma oil producer held his audience with his story of oil, occasionally interrupted by applause and concluding amid an ovation in which senators and representatives who had accepted invitations to be present joined.

Suggestions that the tariff would be detrimental to the consumer were met by the declaration that gasoline prices on the Atlantic Coast where imported oil is used are higher than in the Mid-Continent.

"This importing group of four or five companies will not come before you willingly," Mr. Franklin continued, "because they know statements I make are true. All industries in the oil states depend on maintaining our home market for American oil. Farmers of Oklahoma, Kansas and Texas would have starved to death if they had not had oil bonuses, rentals and royalty.

"There is no overproduction of oil in the United States and there never has been. The oversupply is caused entirely from imports. If the United States had taken care of its citizens as Great Britain does we would not allow the Royal Dutch-Shell to operate here at all. No American citizen can go any place in the British empire without being blocked if he attempts to engage in the oil industry. We allow foreign companies to come here and sell their foreign oil that pays no tax while our own production is heavily taxed so that some of our states are entirely supported by it."

Opposition to an import tax on oil had been based on claims that refining would be established in South America, he said, but that he contended can no longer be urged because the big companies have established refineries there and imports of refined products increased two and a half times last year.

Replying to a question by Senator Thomas, Mr. Franklin told the story of recent cuts in the price of crude in the Southwest.

The meeting was presided over by H. B. Fell, executive vice president of the Independent Petroleum Producers Association.

President Hoover's View

At the close of the meeting plans were made for visiting President Hoover, the meeting with the President having been arranged by Secretary of War Patrick J. Hurley, the newest member of the Federal Oil Conservation Board and personally known to many members of the association during years spent as an active producer of oil.

A meeting in the ballroom of the Mayflower Hotel had been arranged for Monday evening while the 225 members of the association were enroute from Tulsa to Washington, but when their steering committee of 50 members assembled shortly after their arrival here senators and representatives who had accepted invitations to meet with them pleaded the urgency of a diplomatic reception in the social whirl of official Washington and the meeting planned for the association was postponed until this morning in the caucus room of the House Office Building.

President Hoover, it is reported, thought the best results in the conference the Secretary of War had arranged could be achieved by a committee rather than in a large gathering with the result that only 10 or a dozen members could be selected for that duty. Wirt Franklin as head of the association was chosen as the principal spokesman, arguing that the supply of petroleum in this country is so vast there can be no fear of exhaustion of the supply for many generations or hundreds of years to come. The time of exhaustion is so remote in his opinion as to place petroleum on a parity with iron ore, which no one has suggested shall be treated as an exhaustible natural product.

H. B. Fell presided over the meeting of the association's steering committee Monday when there were also present Senators Capper and Allen of Kansas. Senators Thomas and Pine of Oklahoma, Representatives Charles O'Connor, William W. Hastings, Wilburn Cartwright, Tom D. McKeown, Jed Johnson and James V. McClintic of Oklahoma and R. Q. Lee of Texas.

Chances in Congress

At the outside, it is estimated a tariff on oil has about seven votes in the Senate. The proposal was rejected previously in the House. The senators for an oil duty are Capper and Allen of Kansas, Pine and Thomas of Oklahoma, probably the two senators from New Mexico and possibly one from West Virginia. Senators Sheppard and Connally of Texas are said to be opposed to taking oil from the free list.

There has been no change in the situation since it became known last summer that President Hoover was opposed to the oil tariff and his opposition resulted in the proposal being turned down in the House of Representatives.

The American Automobile Association has propagandized Congress in opposition to the tariff, which it declared would be a burden on every automobile owners in the country.

President E. B. Reeser of the American Petroleum Institute, who was in Washington last week, is now in New York and it is understood that while he does not desire to contradict or openly oppose the tariff movement in his official capacity he personally does not believe a tariff on oil will correct the situation, but on the contrary may divide the conservation ranks. This is understood to be also the administration view at Washington, where it is considered that a tariff on oil would be inconsistent with the conservation principle, which is believed to be the only solution for the present predicament of the industry.

Cut Texas Production 100,000 Bbls

Sentiment of Texas Producers at Meetings Held in Fort Worth. General Committee Named to Study Plan

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Feb. 1—Immediate further curtailment of crude oil production in Texas was discussed by about 300 oil producers who met at the Texas Hotel here yesterday. As a result of the meeting a general executive committee was appointed by Edward T. Moore, president of the Texas Division of the Mid-Continent Oil and Gas Association, for the purpose of studying the various producing areas of the State, and the possibility of curtailing their daily production to a still lower plane, in order to help bring the supply of crude oil down to the level of demand, and thereby restore the old price schedule.

The general committee consists of J. D. Collett, chairman, independent operator, Fort Worth; T. J. Donoghue, The Texas Company, Houston; W. F. Morgan, United Producers, Refugio; J. S. Cosden, Cosden Oil Co., Fort Worth; Sheldon Hardin, Southern Crude Oil Purchasing Co., Fort Worth; Joe Danciger, Danciger Oil & Refining Co., Fort Worth; Mills Bennett, independent operator, Houston; K. C. Baker, United North & South Development Co., San Antonio; W. B. Hamilton, independent operator, Wichita Falls; W. W. Fleming, Mid-Kansas Oil & Gas Co., Tulsa; Earl Calloway, independent operator, Amarillo; E. J. Allen, Shell Petroleum Corp., Dallas; F. J. Adams, Gulf Production Co., Fort Worth; L. E. Barrows, The Texas Company, Fort Worth; J. S. Bridwell, Bridwell Oil Co., Wichita Falls; Warner Clark, California Co, Dallas; E. H. Blum, Atlantic Oil Producing Co., Dallas; Tom E. Cranfill, Cranfill-Reynolds Co., Dallas; Frank Cullinan, Republic Production Co., Houston; W. H. Francis, Magnolia Petroleum Co., Dallas; E. A. Landreth, Landreth Production Co., Fort Worth; Edgar J. Marston, Texas Pacific Coal & Oil Co., Fort Worth; W. A. Moncrief, independent operator, Fort Worth; John M. Mouser, Prairie Oil & Gas Co., Eastland; Underwood Nazro, Gulf Production Co., Houston; John D. O'Donohoe, Petroleum Producers Co., Wichita Falls; Robert R. Penn, Penn Oil Co., Dallas; B. S. SoRelle, Pure Oil Co., Fort Worth; John R. Suman, Humble Oil & Refining Co., Houston; M. B. Sweeney, Sun Oil Co., Dallas; and Charles F. Roeser, Roeser & Pendleton, Fort Worth. In this group are: Warner Clark, John F. O'Donohoe, Charles F. Roeser, J. S. Bridwell, Robert R. Penn, Edgar J. Marston, Frank Cullinan, and T. B. Hoffer, who comprised the first committee chosen by Mr. Moore to meet with W. S. Farish, president of the Humble Oil & Refining Co. at Houston on January 20, and discuss the reason for that company's posting the crude oil cuts on January 16.

Committee in Action

This new committee is already in action, having met in session immediately after the adjournment of the morning's general meeting. Subcommittees are to be appointed in the various flush areas where there are not already proration or advisory committees, and these subcommittees will study the best methods for handling the problems of curtailing their respective fields. Further curtailment is not mandatory, and no forceful measures are to be resorted to, but it is believed all operators and producers will see the benefits to be derived from such actions as might be taken. The Texas State Railroad Commission will take all plans under advisement, and before any new proration movement is adopted for any of the areas, or all of the State, this commission will have to place its stamp of approval on it. Among the most noted flush production pools and potentially large pools of the State under proration are the Yates Pool, Pecos County; Hendricks Pool, Winkler County; Bowers, LeFors and Finley-Brown Pools of Gray County; Darst Creek Pool, Guadalupe County; and Van Pool in Van Zandt County. A unitization plan of control is being used in this latter pool to keep drilling and production to a minimum.

On February 6 another meeting of the central committee will be held in Fort Worth to discuss work of the subcommittees, and go over the plans proposed for bringing production down another 100,000 bbls. The committee will act methodically but rapidly in formulating plans and putting them into action; for immediate curtailment will be the greatest factor in reinstating crude prices. Delay will mean losses to all producers, therefore co-operation by all interested parties is greatly desired by the central committee.

To Cut 100,000 Bbls.

In opening yesterday's meeting, Mr. Moore stated the problem for all producers in the State of Texas was to bring production down to refinery demands, and the central committee chosen by him it is hoped will formulate the plans for solving that problem. It is believed that if 100,000 bbls. daily production can be lopped off the present daily average production of the State, it will go far toward helping to solve the problem.

Following the opening of the meeting by Mr. Moore, J. P. Laney, secretary of the Texas Division of the Mid-Continent Oil and Gas Association, read the report of the committee which met with Mr. Farish on January 20 at Houston, (published in The Oil and Gas Journal last week).

The report was unanimously approved, and the committee given a vote of thanks for the work it had done in behalf of the producers of Texas. At this point proponents of an oil tariff made several short speeches, but it was agreed that the tariff problem should be left until the afternoon meeting and discussed at that time, instead of mixing the two questions.

Robert R. Penn, president of the Penn Oil Co., Dallas, and member of the first committee chosen by Mr. Moore, explained that that committee was not appointed to study the tariff problem, but for studying the present situation of the oil industry and methods for relief, and that another committee should be appointed to study the tariff problem. "The immediate need," he said, "was further curtailment of production."

J. D. Collett, independent operator of Fort Worth, and chairman of the cen-

(Continued on Page 144)

Independent Producers Ask Tariff

Special Train to Washington Follows Meeting in Tulsa at Which Funds Are Raised to Finance Campaign

By James McIntyre

A special train load of Mid-Continent oil producers, some of whom were oil refiners, as well, left St. Louis on Sunday afternoon for Washington to petition the United States Senate for a tariff on imports of crude petroleum and refined products. The oil men came from every point in the Mid-Continent Field, which includes Kansas, Oklahoma all of Texas excepting the Gulf Coast and Southwest Texas Fields, North Louisiana and Arkansas, and made St. Louis the rallying point. At their head was Wirt Franklin, of Ardmore, Okla., president of the Independent Petroleum Association of America, and a producer and refiner in Oklahoma.

The special train was provided out of the $100,000 fund raised by the Independent Petroleum Association to carry on the campaign for a tariff on oil, partly raised at a mass meeting held in Tulsa on Wednesday, January 29, and completed since by the contributions of oil men who were not present at the Tulsa meeting.

The spirit of the crowd of oil men who left their business to go to Washington was that if it is impossible to get a tariff on oil from the present session of Congress the Independent Petroleum Association of America will continue the campaign into the next session. It is for the purpose of carrying on what may be a long-drawn out fight that it has provided a war chest of which the $100,000 already pledged is to be a nucleus. It is aimed to use the money in a national campaign of education in the event that no success is attained at the present session of the national law makers.

The mass meeting held in Tulsa brought to the city a large number of oil producers from other Oklahoma cities and other states. The large Crystal ballroom of the Hotel Mayo was filled to its capacity. Wirt Franklin presided and addresses were made by Mr. Franklin, Pat Malloy of Tulsa, James H. Gardner, geologist, Tulsa; Thomas Cranfill, of Dallas, Tex.; Joe Panciger, of Fort Worth, Tex.; H. W. Bell, of El Dorado, Ark.; H. B. Fell, of Ardmore, Okla.; H. E. Tucker of Ardmore, and Wade H. James of Tulsa.

In addition to raising a large part of the campaign fund from the floor, the meeting put itself on record with the following set of resolutions:

Resolutions for Tariff

"Whereas, a representative meeting of the oil producers, royalty owners and business men identified with the oil industry in the Mid-Continent Field was held on this twenty-ninth day of January, 1930, in the city of Tulsa, Okla., for the purpose of considering the immediate pressing problems confronting the industry in the United States; and

"Whereas, under the suggestion of the President of the United States, Honorable Herbert Hoover, that the oil resources of this country should be conserved from waste through co-operative agreements of the industry itself; and

"Whereas, due consideration of such recommendations were made through the Federal Oil Conservation Board was given in conjunction with representative members of the oil industry; and

"Whereas, under the specific leadership and suggestion of the leading integrated oil companies a policy of curtailment of production for the requisite needs of the industry was agreed upon and placed in effect to the extent that during the month of November, 1929, over 4,000,000 bbls. of crude petroleum was drawn from storage for the purpose of meeting the demands of domestic refiners; and

"Whereas, the oil producers had been given to understand that if they curtailed their production to meet these requirements to balance with the demand that the price of crude petroleum would be stabilized; and

Producers Not Heard

"Whereas, without notice to the oil producers and without their being given an opportunity to be heard, a sudden drastic cut in the price of crude petroleum was put into effect by certain of the oil purchasing companies in the United States, some of whom are subsidiaries of and controlled by importers of foreign crude oil and its products into the United States; and

"Whereas, these large companies were most instrumental in urging the above conservation policy while at the same time they are importing petroleum and its products in increasing quantity,

"Therefore, be it resolved that it is the sense of this meeting that this action by these said companies is an outstanding breach of faith and co-operation with those oil producers and royalty owners of this country who have co-operated with them; and

"Whereas, it is therefore obvious that complete relief can only be attained through a continuation of co-operative curtailment of domestic production to meet the needs of the refining trade, together with an adequate tariff on crude petroleum and its products to safeguard the domestic industry from unwarranted and destructive competition;

Continue Curtailment

"Now, therefore, be it resolved that we indorse a continuation of curtailment of domestic production to meet the needs of the refining industry with the understanding that such curtailment will be made effective in the flush fields where destructive water conditions may not imperil the same; and

"Therefore, be it resolved, that we urge that the Congress of the United States give to the oil industry through a tariff on crude petroleum and its by-products the same protection that is extended to other industries.

"Be it further resolved that we call the attention of the Congress of the United States that there is involved in this issue not only the interests of the oil industry but the relationship of the

(Continued on Page 140)

Gas Propulsion of Petroleum

Diastrophic, Capillary and Hydraulic Theories Considered. Effect of Dissolved Gas on Viscosity and Surface Tension

By Gertrude Sober-Fields

Favoring the theory of organic origin, most petroleum geologists concede that oil and gas were evolved from organic detritus in buried sediments by dynamo-chemical activity enhanced by heat and pressure.

A region within approximately 100 miles of old shore lines has been designated as the most favorable location for the accumulation and deposition of such organic material. But with the epi-continental seas repeatedly—perhaps continually—advancing or retreating this favored zone would evidently be, at some time, practically everywhere that such seas formerly predominated. Undoubtedly formations capable of oil production are widespread. A test of shales gave a yield of from one-fourth to 2 bbls. of oil per ton. A bed of such shales 10 feet thick yielding one-half barrel of oil per ton could be the source of oil amounting to 13,000 bbls. per acre. A limestone bed of 100 square miles and 500 feet thick, with impregnation of one-tenth of 1 per cent would yield 250,000,000 bbls. With extensive areas of such competent source rocks the accumulations of petroleum are comparatively rare, indicating that local conditions have been the dominating agency of oil generation and accumulation. Since oil fields occur in regions folded and faulted it appears that diastrophic movements have been at least contributory factors.

Accepting the oil and gas as already formed various theories are offered concerning the method of their escape from the source rock, and the migration and accumulation in commercial pools.

Diastrophic Theory

The diastrophic theory states, "Petroliferous accumulations are generally coincident with diastrophic deformations, synchronous with them, and essentially a result of them." Compression of bituminous-bearing strata by superimposed formations, further enhanced by orogenic movements is presumed to have squeezed out the oil and gas which were then transported by water to anticlines.

If compression forced liquids out of the formations they would escape in any direction away from the source of pressure; this would appear a process of dissemination rather than of accumulation. Experiments indicate that such squeezing out could not occur as muds or shales have capacity to hold oil in the sediments by purely mechanical action as the oil globules are larger than the mineral particles of mud.

Anticlinal Theory

The anticlinal theory is based upon the fact that oil is frequently found in anticlines where gas, oil and water are believed to have segregated by gravity. No doubt such separation could occur under favorable conditions, but this would be only the finish of a complicated process after the oil and gas had been generated, transported and accumulated in the anticline. Gravitational sorting requires not only a necessary degree of dip, but also a necessary degree of porosity because surface tension checks the motion for gravitational sorting in pores below a certain size.

Experiments indicate that oil and water in sand grains 0.2 mm. in diameter will not segregate on a gravity basis. The majority of the particles of most slates, clays and shales are much smaller. In finer sands gas is not able to assort itself on the gravity basis without the additional burden of carrying the oil with it. It has been shown experimentally that the force of gravity alone is not sufficient to overcome viscosity and adhesion of the oil.

Capillary Theory

The capillary theory contends that surface tension will cause oil and water to be drawn into capillary openings, regardless of the force of gravity, as water

(Continued on Page 140)

SUMMARY OF AUTHOR'S CONCLUSIONS

Pressure and heat enhanced by earth movements develop dynamo-chemical activity in the sediments, the effect of which is to generate oil and gas. The result of this activity is comparable to that of "cracking stills."

Heat and pressure reduce the viscosity and surface tension of oil.

A large amount of gas is dissolved in the oil.

This ability of oil to dissolve gas provides its agent of transportation.

Propulsion of oil by gas generated with it in the source rocks obviates the necessity of any invading agency whose source might be questioned, and whose entrance might be barred by depth and density of the productive formations.

The property of continued expansion of gas with continued heat and pressure provides its own exit in the direction of least resistance.

Tendency of gas to seek the higher places brings the oil from depths in all directions to the highest points available, obviously without need of any other transporting agent.

Faults and fissures provide channels for extensive migration.

An absence of faulting would explain the barrenness of some apparently competent structures.

Continued expansion and evolution of gas from the still heated oil, after the sealing of the pool, accounts for the tremendous gas pressure of some pools. This sealed-in gas pressure is gradually reduced, in time, by exit provided by development of the field.

Generation of oil by heat and pressure, and its transportation and accumulation by gas, while still hot explains the present heat of many producing anticlines.

Evolution of oil and gas from dried-out sediments accounts for oil without water in synclines of Appalachian Field.

The gas propulsion theory provides a competent and ever-present agent of transportation and accumulation for petroleum from its inception in the source rocks to its final resting place in the pool.

When, at last, the mechanism of human ingenuity bites through its cover rock, the same power that brought the oil from its source bed propels it in a renewed journey to the surface.

Barren Waste Undergoing Big Change

Discoveries in Lea County, New Mexico, Transform That Area. Humble's Gusher at Hobbs Stimulates Activity

By Tolbert R. Ingram

DENVER, Colo., Feb. 3.—Lea County, in the southeastern corner of New Mexico, which a few years ago was a barren waste with nothing in its appearance to attract the attention of the wildcatter, is undergoing its biggest and most important change as a result of the enormous exploration campaign which has been under way since 1924. The change is in many respects remarkable. It was and is a land of surprises and contains many things to interest the oil man. The latest development was the bringing in of a well on the Hobbs structure which gauged 464 bbls. in one hour, or at the rate of 12,000 bbls. a day. Of equal interest with this development is the claim that the structure upon which this well was drilled is the first outside of the salt domes in the Gulf Coast region in which the drilling was done on 100 per cent geology worked out by geophysical methods.

A description of the area as it was seen by a representative of one of the major companies sent into the district in the fall of 1928, contained in a telegram he sent to his employer, has become a classic. It said:

"Watchful waiting continues to feature the development in southern Lea County, New Mexico, a county 108 miles long and 30 miles wide, which has no banks, no running streams, no bridges, more cows and less milk and where you can look farther and see less than any county of similar size in New Mexico."

That picture has changed. There are oil pools scattered all around the county. It is true that some of these pools have only a single well drilled to production, but they proved that the oil was there. The fact that no offset wells are being drilled is something for which the industry may feel thankful. This is due largely, in the instances of one or two wells to a pool, to large blocks around the discovery under a single ownership. Take for example Henderson, Dexter & Blair's No. 1 McDonald & Jewett, SE cor., Section 18-20-34. It is in the center of a block of four sections jointly controlled by that firm and the Empire Gas & Fuel Co. Again, the Vacuum Oil Co.'s No. 1 State, Section 13-17-34, has almost been forgotten by the general public though it is less than six months old. Several other instances might be named, but we will get back to the changes that are taking place.

Many Improvements

More important pools, such as the Jal, the Lea and the Hobbs have been opened up, pipe lines are slowly making their way northward into the county from Texas, a railroad is being constructed through the fields, highways are being built, small towns are springing into existence, gas is being piped out of the county 200 miles away to El Paso, tank farms are beginning to rear their heads above the landscape, and most of the major oil companies of the country are sitting in on the picture.

Attention was attracted to this area in 1924 when the Artesia Pool was discovered. After that considerable geological work was done, but for a long time thereafter the oil man could only sit and contemplate the blank space on the map and wonder what was there. The major difficulty at first was the lack of geological information. Almost all the outcrops that could have any bearing on the occurrence of oil are found west of the Pecos River whereas all the oil fields lie to the east of it. East of the river the country is covered by caliche, or by the caliche-capped sand and gravel of Tertiary age, or by loose sand that is wind-blown into dunes. There is nothing on the surface to indicate the presence of structures. Geological parties had more than the usual difficulties. There was beside the sand, a scarcity of stores, no roads, but plenty of mesquite and rattlesnakes. The mesquite was bad enough. It had thorns which punctured tires. Sometimes scouts returning from a trip would have to employ somebody to pull them out, and they came out by the score. Also, there was wind and a road today might be a sand dune tomorrow.

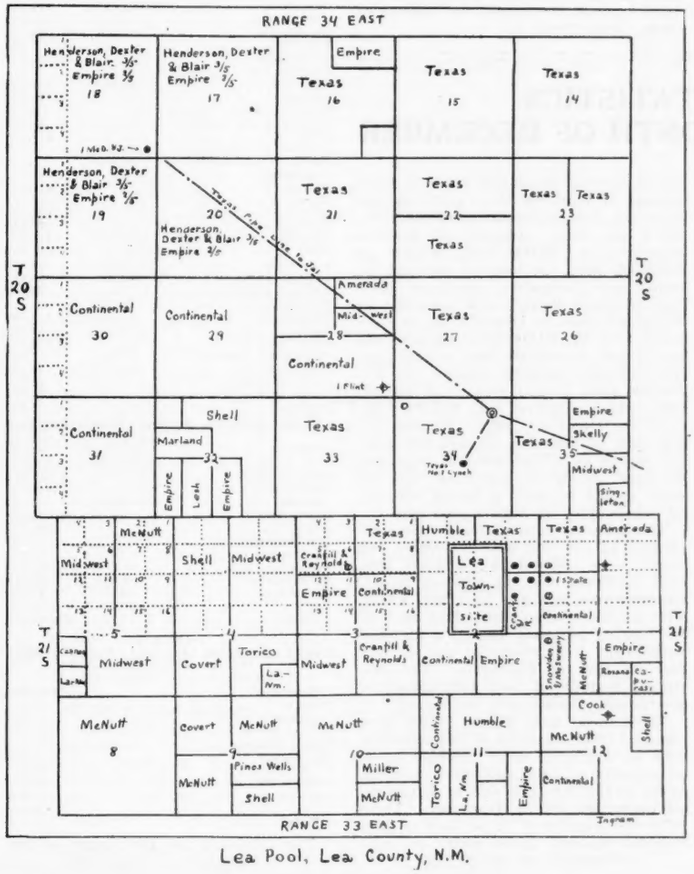
It was not until the first big well in the Hendricks Pool, in Winkler County, Texas, 15 miles south of the line, that Lea County got its big play. And such a play as it was. It was described in The Oil and Gas Journal of February 28, 1929. That description said that never in the history of the industry had a campaign covering such a wide scope of territory been carried on and never had wildcat acreage brought such prices. This was due to the belief that the Permian beds of West Texas extended on up into Lea County and that they would prove productive when drilled. But nobody knew where to drill. The result was that companies bought acreage in large blocks. Almost every part of the county was leased solid. It was estimated a year ago that between $15,000,000 and $18,000,000 was the total cost of the campaign up to that date. Wildcats were scattered at wide distances, but almost anywhere in the county a man could look across the horizon and see a lonely derrick somewhere in the distance. The oil companies exchanged well logs and geological information and gradually the picture began to take form.

Hobbs and Lea Areas

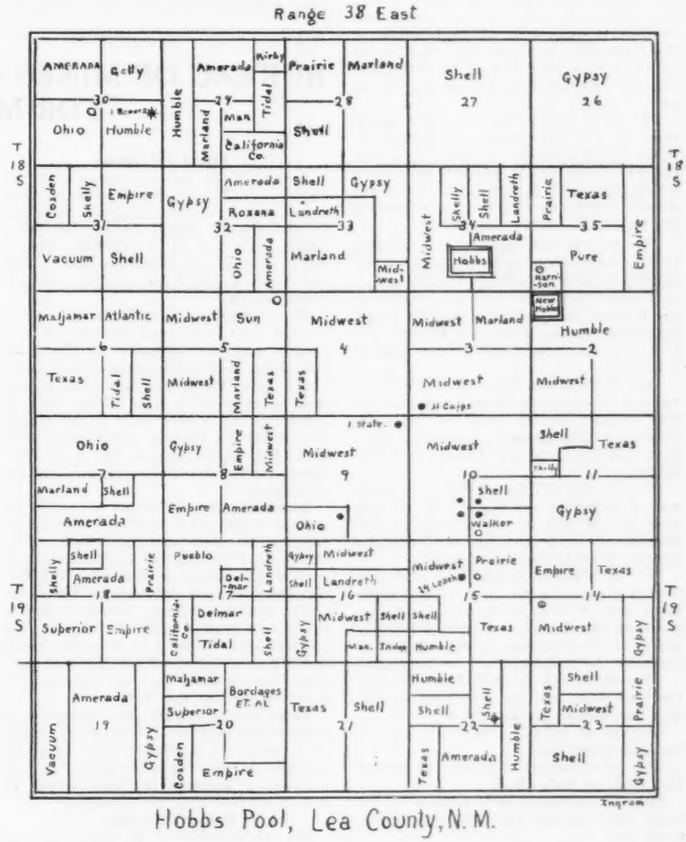
In the fall of 1927, the Texas Production Co.'s No. 1 Rhodes, NE NW, Section 22-26-37, just north of the Winkler County line, came in and was completed at 3,216 feet for 22,000,000 feet of gas and 120 bbls. of oil a day. The development that followed, the discovery of the Hobbs Pool, the Lea Pool, and the isolated producers, is described in considerable detail in the annual review published in The Oil and Gas Journal last week and will not be repeated here. Instead, this will be confined to the Hobbs and Lea areas in which changes have taken place very rapidly the past few weeks.

The credit for the discovery of the Hobbs Pool goes to the Midwest Refining Co. It went in and drilled 100 per cent on geophysical information. Its men were in the county shortly after the Artesia discovery and scope of its work gradually was extended. Outside of the regional geology, there was little upon which to go and it centered its geophysical work upon the area in the vicinity of the Hobbs store. The magnetometer and the torsion balance were the instruments used and more than a year's time was devoted to the work. Its first well, No. 1 State, was spotted in the NE cor., Section 9-19-38, and drilling commenced on

(Continued on Page 110)



Lea Pool, Lea County, N.M.



Hobbs Pool, Lea County, N. M.

Operations of European Wax Cartel

Growth of Group Movement in International Petroleum Industry. Text of Agreements. Decrease in American Wax Exports

By John H. Nelson

The co-operative or group movement in the international petroleum industry has gained additional impetus with the formation of a form of European paraffin wax cartel as of October, 1929.

This cartel is made up of the leading paraffin producers and marketers for Europe, namely: Bedford Petroleum Co., Ltd., together with associated companies for Europe; Burmah Oil Co., Ltd.; Asiatic Petroleum Co., Ltd., and the Syndicate of Polands Oil Industry.

This European wax cartel was formed along the lines of most existing European cartels as indicated in the agreements quoted below. There is a third letter of agreement which is not available at this time and which covers in greater detail the exact functioning of this wax group but a general idea of their objective and procedure is clearly outlined.

Text of Agreement

"An agreement made between Bedford Petroleum Co. and its associated companies on the one part, the Syndicate of Polands Oil Industry on the second part, and the Asiatic Petroleum Co., Ltd., and Burmah Oil Co., Ltd., jointly on the third part, whereby it is agreed as follows:

"1. The period of this agreement shall be for 5 years as from 1st of October, 1929, it being understood that either party has the right to terminate this agreement at any time by giving six months' formal notice in writing.

"2. Each party agrees to market its paraffin wax as from the 1st of October, 1929, in the proportion of their deliveries during 1928 to the total trade of 1928 on a 12 months basis.

"3. The Bedford Petroleum Co. takes cognizance of the fact that the Syndicate of Polands Oil Industry and the Asiatic Petroleum Co., Ltd., and Burmah Oil Co., Ltd., will enter into a separate arrangement regarding the marketing of their paraffin wax and that the quotas of these two parties will be considered vis-a-vis the Bedford Petroleum Co. as one.

"4. It is understood that this agreement will be terminated as far as the Syndicate of Polands Oil Industry is concerned as soon as the separate agreement which they are entering into with the Asiatic Petroleum Co., Ltd., and Burmah Oil Co., Ltd., is terminated.

"5. Should the Syndicate of Polands Oil Industry cease to be a party of this agreement as stipulated in Clause 4 then this agreement shall continue as far as the Bedford Petroleum Co. and the Asiatic Petroleum Co., Ltd., and Burmah Oil Co., Ltd., are concerned as per Clauses 1 and 2.

"6. It is agreed that the Bedford Petroleum Co. will not market any paraffin wax in the following countries: Austria, Czechoslovakia, Danzig, Esthonia, Hungary, Latvia, Lithuania, Poland and Yugoslavia.

"7. In the selling of their paraffin wax it is recognized that so far as possible the parties to this agreement will dispose of their wax in the countries nearest to their sources of supply.

"8. It is agreed that should other producers of paraffin wax join in this agreement they will enter into the arrangement on the basis of Clause 2 but the approval of all parties to this agreement must in the first instance be obtained."

"Signed on behalf of Bedford Petroleum Co., Ltd., and its associated companies for Europe by Crampton.

"Signed on behalf of Burmah Oil Co., Ltd., by Hamilton.

"Signed on behalf of Asiatic Petroleum Co., Ltd., by Debenham.

"Signed on behalf of Syndicate of Polands Oil Industry by Wygard and Arnicki."

"The Syndicate of Polands Oil Industry, L W O W, Poland.

"Dear Sirs:

"With reference to your letter of the 1st instant embodying the agreement come to between the British group and the Polish Syndicate dated October 1, 1929, both parties agree as follows:

"1. With regard to Clause 1 the Polish Syndicate agrees to keep the British group advised of the quantities of paraffin wax produced in Poland and controlled by the Polish Syndicate and the quantities of paraffin wax produced in Poland and not controlled by the Polish Syndicate.

"2. The Polish Syndicate confirms that the quantity of paraffin wax which they shall have available for export from Poland during 1930 shall not exceed the quantity of paraffin wax which they exported from Poland during 1928.

"3. The Asiatic Petroleum Co. will so far as they have the right to do so, arrange for the Shell Floridderfer, Vienna, to quote level prices for paraffin wax, with the Polish Syndicate.

"4. The British group undertakes to consult the Polish Syndicate before any charge is made as regards agents and before any increase is made in commission at present being paid to agents in the pooled areas. A list of the commissions (whether including or excluding del credere) which are at present being paid to agents was sent to the Polish Syndicate on the 19th of June, 1929.

"5. As regards remittances of proceeds of sales, where possible agents will be instructed to remit monies direct to Poland and/or London as the case may be.

"6. With reference to Clause 14, it is agreed that each party shall obtain specific authority from the other party before closing any contract in the other party's name.

"7. The British group agrees to give the Polish Syndicate immediate instructions for the forwarding of about 2,500 tons of paraffin wax against their quota and to examine the position to see whether instructions can be given for any additional quantities this year.

"Yours faithfully,

"For the Burmah Oil Co., Ltd., and the Asiatic Petroleum Co., Ltd.

"mp. Hamilton.

"mp. Debenham."

American Exports Decrease

United States exports of paraffin wax for the first eight months of 1929 as shown in detail in Table A showed a marked decrease of 92,408,107 pounds as against the same period of 1928 but this decrease is believed to be coincidental with the above agreements and not directly a result of them. This belief is further supported by a study of the erratic movement of wax exports over a long period of years.

It will be noted that during the first eight months of 1928 Europe took approximately 59 per cent of our total wax exports while in 1929 this figure became 51 per cent of the total. Detailed wax exports for the month of September, latest available, are given in Table B as those of a typical month. These exports are cleared through the ports of New York, New Orleans, Philadelphia and Baltimore, ranked in the order of their relative importance.

Since the United Kingdom is the largest single importer of American wax a brief glance at the statistics of recent trade in this commodity discloses no unusual changes in source or volume of trade. (See Table C.)

TALBE A

U. S. Exports Paraffin Wax 1929 (in Lbs.)

To—	Eight months Ending August 1928	August 1929
Belgium	8,658,576	3,809,155
Germany	10,488,049	10,263,829
Irish Free State	5,530,340	2,742,383
Italy	38,566,393	17,615,883
Netherlands	10,028,058	8,731,755
Spain	11,547,657	6,753,295
Sweden	4,610,564	5,817,673
United Kingdom	76,815,343	45,329,763
Other Europe	5,059,020	5,537,988
Total Europe	171,304,000	106,601,724
Central America	5,671,507	5,262,867
Mexico	12,064,530	13,661,795
Cuba	2,077,082	1,661,602
Argentina	9,958,549	6,114,802
Chile	21,500,761	6,986,749
Colombia	6,614,315	7,847,582
Peru	2,488,757	3,635,423
Other South America	5,936,223	6,386,912
China, HongKong & Kwantung	27,672,607	21,416,649
Japan	9,968,127	6,015,038
Philippine Islands	416,450	938,720
British South Africa	2,034,426	2,429,498
Other countries	9,769,486	6,109,362
Total all countries	287,476,830	195,068,723
Unrefined	59,795,065	45,187,353
Refined	227,681,765	149,881,370
U. S. Imports Paraffin Wax 1929 (in Lbs.)		
All sources	15,798,070	27,214,387

TABLE B

U. S. September, 1929, Exports Paraffin Wax (in Lbs.)

To—	Unrefined	Refined
Belgium	102,557	379,429
Denmark	22,382	41,800
Estonia	.....	32,846
Finland	.....	44,000
France	.....	190,265
Germany	298,713	611,223
Greece	10,961	6,834
Irish Free State	225,941	193,976
Italy	1,199,261	2,450,674
Latvia	.....	22,487
Netherlands	691,491	937,731
Norway	220	63,800
Poland and Danzig	.....	22,487
Portugal	.....	203,613
Spain	.....	868,334
Sweden	479,471	184,844
United Kingdom	3,365,926	6,087,169
Canada	202,526	118,097
Costa Rica	8,000	204,803
Guatemala	210,000	83,607
Honduras	.....	200
Nicaragua	.....	300
Panama	20,240	.....
Salvador	96,000	102,451
Mexico	.....	3,076,339
Newfoundland	.....	6,702
British West Indies	.....	51,370
Cuba	.....	266,966
Dominican Republic	10,000	9,550
Dutch West Indies	5,000	.....
Argentina	.....	1,333,100
Bolivia	.....	347,892
Brazil	.....	116,835
Chile	.....	838,165
Colombia	.....	977,575
Ecuador	132,000	115,231
Peru	.....	635,109
Venezuela	4,000	68,218
British India	303,453	50,651
British Malaya	.....	22,097
French Indo China	33,250	.....
HongKong	55,738	1,113,066
Japan	364,747	482,136
Kwantung	.....	410,930
Philippine Islands	45,186	140
Australia	34,050	16,185
New Zealand	.....	29,092
Union of South Africa	.....	74,734
Algeria	.....	1,650
Customs Districts Through Which Exported		
	Unrefined	Refined
Buffalo	100,995	84,255
New York	5,677,070	9,333,917
Philadelphia	1,818,350	2,756,251
Baltimore	.....	1,841,076
Norfolk	224,131	139,192
New Orleans	.....	7,690,227
Sabine	.....	348,550
San Antonio	.....	165,300
El Paso	.....	9,452
San Francisco	55,738	982,207
Washington	68,620	644,247
All others	33,011	14,805
Total	7,977,915	24,009,479

TABLE C

United Kingdom Imports Paraffin Wax (In American gallons)

Month of September, 1929

Source—	Amount
Poland	5,466
Germany	304
Netherlands	48
Dutch Borneo	840
Roumania	5,669
U. S. America	77,111
British India	44,865
Canada	240
Total	134,543

The following are the figures of im-

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BUREAU OF MINES STATISTICS FOR MONTH OF DECEMBER

Crude Petroleum

According to reports received by the Bureau of Mines, Department of Commerce, the production of crude petroleum in the United States during December, 1929, amounted to 80,339,000 bbls., a daily average of 2,592,000 bbls. This represents a small decline from the previous month.

The curtailment inaugurated in November was continued throughout December and the majority of the fields and states declined in output. The Oklahoma City Field increased its output from a daily average of 55,000 bbls. in November to 74,000 bbls. in December. The Santa Fe Springs, California, Field showed a small increase but both West Texas and Seminole continued on the downgrade.

Although the production of crude remained nearly stationary, the demand for refining purposes decreased and stocks increased. Pipe line and tank farm stocks east of California were lower—335,084,000 bbls., against 336,028,000 bbls., but stocks held by refiners increased during the month from 44,235,000 bbls. to 46,195,000 bbls. Stocks of refinable crude in California decreased but this was more than compensated by an increase in heavy crude and fuel stocks.

Total stocks of all oils amounted to 682,069,000 bbls. on December 31, 1929, an increase of 3,595,000 bbls. over the previous month. This increase is in contrast to a decrease in these stocks of over 3,000,000 bbls. in November.

Refined Products

The production of gasoline for the month totaled 37,133,000 bbls., a daily average of 1,198,000 bbls., and a decline from the previous month of 46,000 bbls., or 4 per cent. Imports of gasoline amounted to 716,000 bbls., exports to 5,964,000 bbls., the latter a material increase over November. Stocks of gasoline increased sharply and amounted to 43,115,000 bbls. on December 31 as compared with 37,780,000 bbls. the previous month and 33,066,000 bbls. a year ago. The indicated domestic demand was 26,550,000 bbls., a daily average of 856,000 bbls., which compares with 857,000 bbls. daily for December, 1928. At the current rate of domestic demand, the gasoline stocks as of December 31 represent 41 days' supply as compared with 32 days' supply on hand a month ago and 34 days' supply on hand a year ago.

The domestic demand for kerosene increased 12 per cent over November and stocks were reduced to 9,039,000 bbls. from 9,366,000 bbls. the previous month. Cracking rose to a new high level which, with an increase in demand of fuel oil for heating purposes, caused a material withdrawal from stocks of gas oil and fuel oil east of California. The statistical position of both lubricants and wax remained practically unchanged.

The refinery data of this report were compiled from schedules of 346 refineries with an aggregate daily recorded crude oil capacity of 3,617,940 bbls., covering, as far as the bureau is able to determine, all operations during December. These refineries operated at 72 per cent of their recorded capacity, given above, as com-

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"Electric Coring" Method Is Devised

French Engineers Invent System Based Largely on Fact that Different Classes of Rocks Present Varying Degrees of Resistivity

By L. G. E. Bignell
Petroleum Engineering Editor

Under certain conditions it has been found desirable to obtain information about the various formations passed through in drilling wells into the earth's surface that is not available to the driller by ordinary methods. To get this type of data the "electric coring" method has been devised by two French engineers, Conrad and Marcel Schlumberger, and recently introduced into the United States.

The inventors of the system in describing it say the resistance presented by different classes of rocks varies greatly and forms physical parameters which can be conveniently measured in the interior of a borehole. With the exception of certain metallic ores which have the property of electronic conductivity (like metals), rocks are capable of transmitting an electric current only by means of the water which they have imbibed. Therefore, their conductivity is solely electrolytic, and disappears entirely with

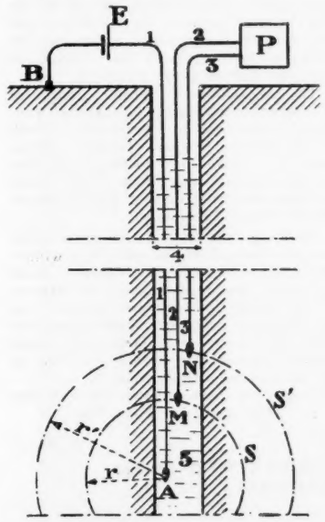


Figure 1—Diagram illustrating the measuring apparatus used in the electric coring system.

drying. The solid mineral elements are almost perfect insulators, which the current skirts in following the damp veins. The following approximate law has been deducted therefrom:

The specific resistivity of a rock is: (1) Inversely proportional to the quantity of imbibing water contained in a cubic meter of rock. (2) Proportional to the resistivity of this water, therefore roughly inversely proportional to the total quantities of salts dissolved per unit of volume of the water.

One can also say, which comes to the same thing, that the resistivity of a rock is in inverse proportion to the total weight of electrolytes dissolved in a cubic meter of the rock. Quoting the inventors:

Subject to Modifications

"These underlying principles are, of course, subject to many modifications, according to conditions; the angle at which sedimentary strata are inclined, for instance, affects the resistance; a rise in temperature reduces the resistance, etc.

"One of the accompanying illustrations (Figure 1) shows the measuring apparatus in diagrammatic form. It comprises three insulated cables, 1, 2 and 3, suspended in the hole, 4, and terminating towards the bottom in three electrodes, A, M and N, immersed in the well water, 5. The diameters, AM=r and AN=r', are chosen greater than the diameter of the hole. The electrode A serves to send the current into the soil, the electrodes M and N to measure the difference of potential produced by ohmic effect between these two points by the passage of current into the soil.

"To send forth a current by the electrode A the latter is connected, by means of the insulated cable 1, to one of the poles of a source of electricity, E, situated above ground, the other pole of the latter being earthed at any point, B, close to the well. To measure the difference of potential resulting between M and N, these two electrodes are connected by means of the insulated cables, 2 and 3, to the two terminals of a potentiometer placed above ground.

Average Resistance May Be Calculated

"Knowing the distances r and r', the intensity i of the current force (measured, for example, by an ampere-meter), and the difference of potential $\triangle V$ between M and N (measured by the potentiometer), it is possible to calculate the average resistance of the soil surrounding the measuring field AMN, if the soil is uniform, in the following manner:

"The current i flowing from A into the soil creates, by ohmic effect, a group of equipotential surfaces enveloping A. These surfaces are, by reason of symmetry, practically spheres centered in A, always excepting: (1) The region quite close to A, where the presence of the borehole full of water and the dimensions of the electrode A cause a certain disturbance; (2) the region away from A where the equipotential surfaces are affected by the earthing at B or the nonhomogeneity of the soil (metal casing of the hole, etc.).

"In particular, the two equipotential surfaces S and S' passing through the points M and N, are spheres of known dimensions by reason of r and r'. These spheres intersect the column of water without noteworthy distortion. The measurement of potential between the electrodes M and N immersed in the water is, therefore, equivalent to a measurement made in the interior of the soil, at the same distances r and r' from the electrode A.

Ohm's Law Applied

"The application of Ohm's law between the spheres S and S' leads to the formula:

$$R = 4\pi \times \frac{\triangle V}{i} \times \frac{rr'}{r' - r}$$

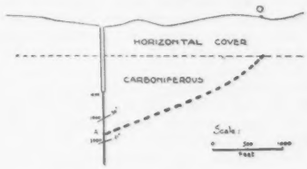
which gives the required resistance, as all the quantities of the second number are known.

"When the soil surrounding the measuring field AMN cannot be considered homogeneous in structure, calculations are more complicated, but nevertheless supply results which are sufficiently exact for practical purposes."

The following table will give some idea of the relative degree of resistivities which may be expected in various rock formations:

	Resistivities in ohms per meter cubed
Salty formations of certain oil districts	0.2 to 10
Clays	10 to 30
Calcareous shales	20 to 40
Shaly limestone	40 to 200
Igneous and metamorphic formations	200 to 1,000 and up
Rock salt	10 to 15

While the conditions set forth in the foregoing table are known, it does not follow that this knowledge can be applied to exploratory work in the oil fields as an exact science for the location of oil-bearing formations. This is due to the fact that rocks of the same type may have different resistivities so far as the use of the electric logging equipment is concerned. However, the system does have many advantages and from the work done in the Mid-Continent area, where wells have been logged by this method, it



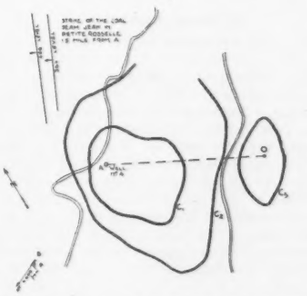


Figure 2—Use of a drill hole in the study of underlying formations near Velsen, France.

appears that the electrically made logs show strikingly similar features for wells situated sometimes at distances of several miles. This permits easy and continuous correspondence between the different horizons encountered by the drill holes.

Portable and Rapid in Operation

One of the principal advantages of this type of equipment is its portability and the rapidity with which a well can be surveyed or logged. The whole equipment is mounted upon a truck and weighs complete less than 3,000 pounds. It therefore can be moved around the country with ease.

To rig up and run into the well required less than four hours on wells in the Seminole area. In other words, the surveying can be done at the rate of about 3,000 feet per hour when the machine is in place.

A chart is made upon special paper which is wound over a set of drums that are synchronized with the drum handling the cable by which the electrodes are lowered into the hole, and as these electrodes are drawn back toward the surface the readings are made at any predetermined intervals of 5 to 40 feet de-

(Continued on Page 143)

CALIFORNIA CURTAILMENT PROGRAM IS THREATENED BY ANOTHER CRISIS

By L. P. Stockman

LOS ANGELES, Calif., Feb. 4.—Another crises has been reached in California's crude oil curtailment program and while this conservation work will undoubtedly be extended for another 90 days things are not running as smoothly as might be desired. Several operators at Santa Fe Springs and a number at Long Beach have flatly refused to sign the supplementary agreement extending the curtailment period for another 90 days. No open break has developed and while the latest curtailment agreement expired February 1 nearly all operators are still adhering to the agreement and are carrying out the cuts prescribed by the umpire.

Several exceptions have been taken to the various potentials established by the umpires and this may result in an early change in the method of establishing potentials. Just how this will be done remains to be seen and operators in flush fields may decide to establish potentials every 15 days on actual flow tests. This plan has one disadvantage, however, in that it substantially increases field production during the period in which the new potentials are established. The operating committee has already held several meetings in an effort to determine the future modus operandi and a final decision should be arrived at some time within the next day or two. The situation in California is not as strong as it was 30 days ago and a further weakening may be anticipated unless the breaks are applied immediately. Conservationists have already taken the bull by the horns and promise drastic action to relieve the situation.

Marketing conditions in California have shown a decided weakening during the past few weeks and distress gasoline is being sold in southern California communities at from 4 to 6 cents below the regularly posted price.

Hearing on injunction proceedings involving Santa Fe Springs operators was resumed in the Superior Court at Los Angeles yesterday and those contesting its validity were instructed to concentrate their immediate efforts on determining the constitutionality of the statute in question. It is the general consensus of opinion that Judge Hazlett will issue a temporary injunction within the next 15 days. There is no way of anticipating the ultimate outcome, however, and the statement just made is a matter of personal opinion. Those opposing application of the gas conservation law will naturally resort to every technicality possible and may be able to prolong enforcement. Its extreme importance warrants close observance, however, as it will reduce crude oil production in California very substantially and eliminate the necessity of any further arbitrary curtailment.

Government May Intervene

WASHINGTON, D. C., Feb. 4.—The Secretary of the Interior has asked Attorney General Mitchell to intervene to prevent the alleged unnecessary production and waste of oil and gas output in the Kettleman Hills, California, oil fields. Such intervention would be in close cooperation with the existing conservation laws of the State of California and would align the Federal Government with that State in the prosecution of the recently instituted injunction proceedings against the Petroleum Securities Corp., which were filed by the State of California. The Petroleum Securities Corp. is the owner and operator of a gas-producing well, lately brought in, known as No. 1 Felix and, the secretary said, is the only member of the oil and gas industry not affiliated with the co-operating group of conservationists now operating in the Kettleman Hills.

Two-stage Separation of Oil and Gas

Capacity of Separator Increased When Operated Under Higher Pressure. Primary and Secondary Separators Described

By R. H. Pence
Signal Engineering Co., Long Beach, Calif.

Control of flowing wells by means of back pressures is admittedly good practice and is gaining favor in every quarter. This has the enthusiastic support of all organizations that are interested in the economical production of oil.

Back pressure is held on the well by means of a flow nipple, or bean, placed in the flow line leading to the separator. This practice allows the pressure to expend itself after passing through the bean, and in so doing the gas expands to a greatly increased effective volume just before the flow enters the separator.

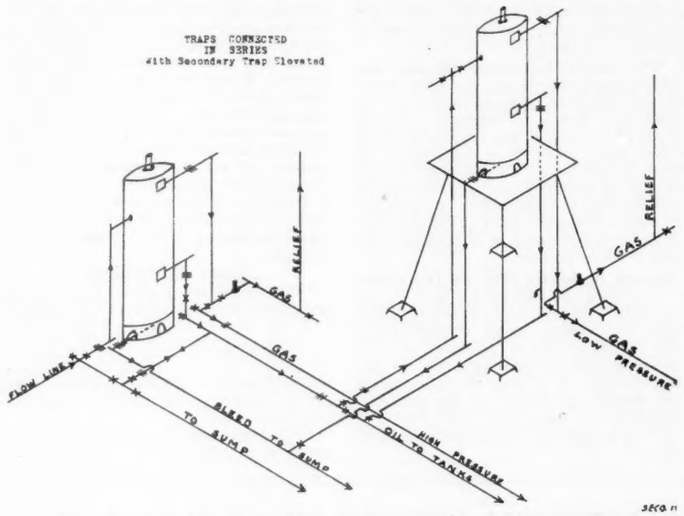
Capacity Under Pressure

Experience has shown conclusively that the capacity of a separator is greatly increased when it is operated under a higher pressure than is now ordinarily held thereon. Undoubtedly this is the outcome of realization that a separator's capacity is controlled largely by the quantity of gas passing through it. A thousand barrels of oil occupies only half of 1 per cent of the space filled by 1,000,000 feet of gas at atmospheric pressure. By increasing the pressure the gas is compressed to a much smaller volume, and at 300 pounds gauge pressure the 1,000 bbls. of oil occupies 12 per cent of the space filled by 1,000,000 feet of gas as measured at atmospheric pressure. Hence, a separator operating at atmospheric pressure, and handling 1,500,000 feet of gas and a normal amount of oil, can easily be made to handle 6,500,000 or 7,000,000 feet when operating at 300 pounds and carry the same ratio of oil.

Primary Separator

To take advantage of the increased capacity of separators when operating at higher pressures, their running pressure has been raised. This is accomplished by putting a back pressure regulator on the gas outlet from the separator, and by regulating the bean at the well so that no increased back pressure is held on the well. An added benefit accrues from this procedure in that high pressure gas is made available for transport, for blowing other wells, etc. Sometimes it is necessary to bean the oil outlet from this primary separator to minimize the cutting action of the flow on the separator control valve.

However, on increasing the operating pressure of the primary separator, a greater portion of the gas is held in solution in the oil than ordinarily exists when separating at a lower pressure. Therefore, at the increased pressure much more gas will escape from the oil when tanked. This condition allows the waste of rich gasoline vapors, and also creates a distinct fire hazard.



Secondary Separator

To offset this a small low pressure separator, connected in series with the high pressure separator, has been found to adequately strip the oil of these vapors, from which much gasoline revenue is obtained. Tank vapors, therefore, are cut to a minimum.

When the high pressure separator is properly adjusted it allows little entrained free gas to enter the low pressure separator, and there is really a small ratio of gas to the oil entering the low pressure separator. Therefore, the low pressure separator will handle a greatly increased volume of oil above its rating. Usually the small secondary separator will handle the output of two or three high pressure separators.

It has also been found advantageous to elevate the secondary low pressure separator so that the oil will gravitate to the tanks, and thereby permit a still lower pressure to be maintained within the separator.

By setting the elevated secondary separator close to the well, and leaving an accessible inlet, another advantage can be had from this series hookup. As the well's production decreases, and finally reaches such a low ebb that it requires a minimum back pressure, the necessary overhead hookup from the tubing can be made, and the whole system of the well's flow lines changed, without inconvenience, and without causing any down time.

Pressure Effect

The gasoline content of natural gas varies with the occurrence of the gas and its chemical makeup. The gasoline content may run from nothing to as high as 12 gallons per 1,000 feet of gas. Usually it runs around 1 or 2 gallons, or slightly higher.

As the oil and gas come from the well and pass through the separator they are in very intimate contact with each other, and in consequence an equilibrium is reached in which part of the gasoline remains in the oil and part of the gasoline remains in the gas. Obviously, if the temperature remains the same, as the pressure increases upon the gas when in contact with the oil, much of the gasoline will be confined within the oil. Conversely, as the pressure decreases the gasoline will be transferred from the oil to the gas in some proportion.

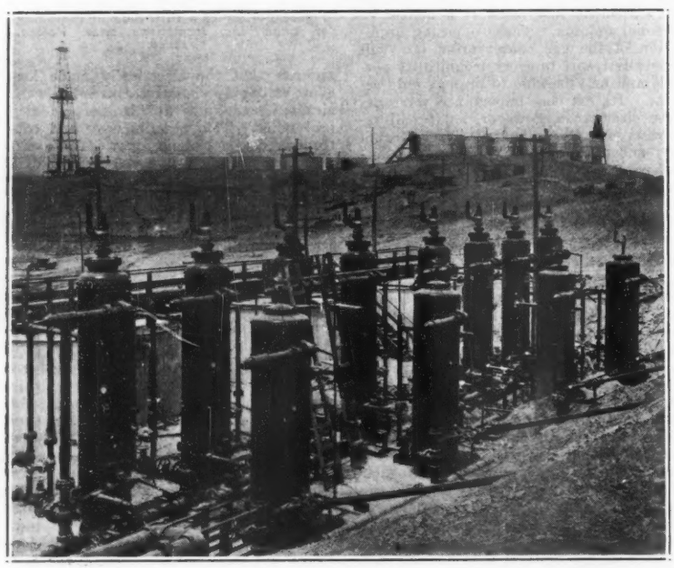
Hence the primary high pressure separator tends to denude the gas of its gasoline content and transfers it to the oil. The low pressure secondary separator then strips the dissolved gas from the entering high pressure oil, which gas carries with it the gasoline which did not show in the separated gas discharged from the high pressure separator.

The accompanying graph illustrates the decrease percentage of gasoline content in gas from a representative well, due to increasing trap pressure. These tests were carried only to 60 pounds, but at this pressure only 45 per cent of the gasoline occurring in that gas at atmospheric pressure remained.

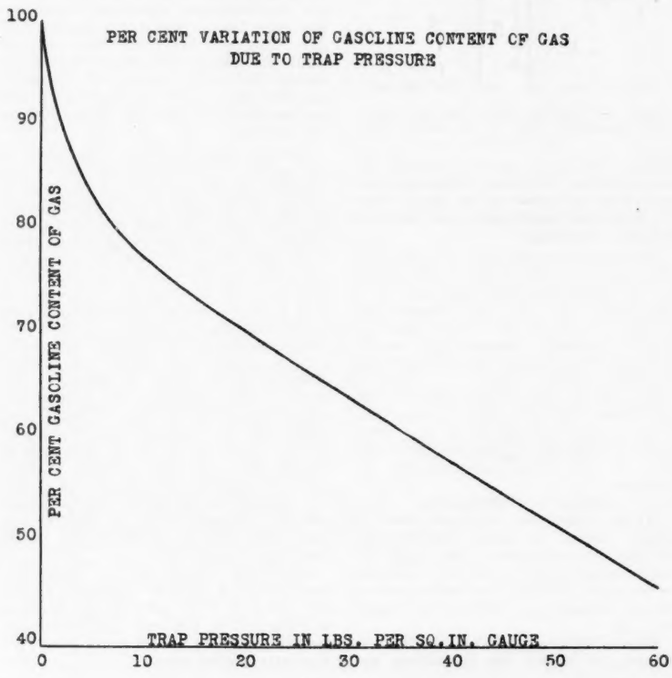
Evidently, the method employing a low pressure secondary separator is a winner any way you take it. It removes a great portion of the tank vapors; it removes a fire hazard; it conserves gasoline vapors that are ordinarily wasted from the tank; and it creates a larger percentage gasoline income than would otherwise be experienced on a flush well.

In general there are two types of sep-

(Continued on Page 124)



Series separator hookup showing each low pressure separator tied into two high pressure separators. This installation separating high pressure gas is located in the Kettleman Hills Field.



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WHAT THE GOVERNMENT FIGURES SHOW

The government report for December shows what was happening in the oil industry in the closing month of the past year. It was not as favorable as had been expected.

These Bureau of Mines figures show a total domestic production of crude for the 12 months of 1,005,598,000 barrels, practically the same as The Oil and Gas Journal Annual Review. In 1928 the domestic production was 901,474,000 barrels.

The total imports of crude last year were 78,915,000 barrels, slightly less than in 1928 which showed 79,767,000 barrels of crude imported.

The total supply of all crude, domestic and imports, in the past year, was therefore 1,084,513,000 barrels contrasted with a total of 981,241,000 barrels in 1928, or an increase of 103,272,000 barrels.

As a consequence the government figures show that crude oil stocks which were 490,788,000 barrels on January 1, 1929, had swelled to 534,526,000 barrels on the last day of the year, an increase of 43,738,000 barrels.

In other words, approximately 40 per cent of this increased output of crude oil was not needed and simply broke down the price of every barrel of crude on hand.

Last year was also a year of additions to stocks of several refined products which was reflected in the fact that total stocks of all oils, crude and refined, increased from 619,725,000 barrels on January 1, 1929, to 682,069,000 barrels on the last day of December, or an addition of 62,344,000 barrels during the year, of which approximately 20,000,000 barrels were refined products.

Of chief importance from the standpoint of the prosperity of the industry was the fact that there was an increase of 10,000,000 barrels to gasoline stocks, which had grown from 33,066,000 barrels on the first day of 1929 to 43,115,000 barrels on the last day of the year.

This shows very clearly that too much gasoline was run to storage in the off season and too little withdrawn from storage during the season of maximum consumption, with the result of a depression in market for the greater part of the year.

Fuel and gas oils, which are direct competitors of crude oil as a source of motor fuel, had stocks of 133,845,000 barrels at the opening of 1929 and 146,085,000 barrels at the end of the year, an addition to storage of 12,240,000 barrels.

The bulk of this increase came early in the year as a continuation of a situation which started in 1927. Towards the close of 1929 there was some improvement in the relation of supply and demand, stocks of these products being reduced in November and December.

Stocks of minor products show an increase of 365,000 barrels of kerosene, and of 77,646,000 pounds of petroleum wax, and a small decrease in stocks of lubricating oils.

A study of these figures shows that these unwarranted increases in the industry's inventories were brought about entirely by operations in excess of the demand which was all that could reasonably be expected.

Our total demand for gasoline was 433,000,000 barrels contrasted with 381,393,000 barrels during 1928, an increase of 51,667,000 barrels or 13½ per cent.

What other industry, after a year showing an increase of 13½ per cent in the demand for its principal product would have ended the year in a depression, as the oil industry did with lower gasoline prices and the probability of lower crude oil prices?

One of the most interesting features in the Government's report shows the part exports have played in the development of the industry's markets.

Our exports of gasoline were 61,208,000 barrels or 14 per cent of our total demand, domestic and foreign, of 433,000,000 barrels.

Of our total indicated demand for kerosene, based on shipments, 57,324,000 barrels, there were 20,018,000 barrels exported, 35 per cent.

The significance of these kerosene exports lies in the fact that the domestic demand has hardly been holding its own during the past few years and there is no prospect that we can increase the demand in this country. If it were not for its use abroad for lighting the American oil industry would face the problem of what we should do with it.

While we have materially decreased the yield in the past several years there is still some 6 or 7 per cent of the crude which can be used only for that product and the foreign demand offers the most promising outlet for it.

Of our production of lubricating oil we export 32 per cent. Lubricating oil is our most refined product, the product involving the greatest manufacturing, and offering the most profitable return. We have a substantial surplus beyond domestic requirement.

Of the total shipments of 592,950,000 pounds of petroleum wax we exported 318,488,000 barrels, or 54 per cent.

Turning to imports, of the 78,915,000 barrels crude brought in, somewhat less than was imported in 1928, 50,000,000 barrels came from Venezuela ranging in gravity from 17 to 21 degrees and 13,000,000 barrels came from Mexico, Panuco crude used for asphalt, no light oil coming from Mexico.

Some 12,000,000 barrels came from Colombia, similar to Coastal crude with about 13 per cent gasoline content.

It is estimated that the gasoline content of the crude imported was about 8,000,000 barrels which, added to the 9,000,000 barrels of gasoline imported, supplied a total of 17,000,000 barrels of gasoline out of the total consumption of 433,000,000 barrels.

Or, looked at another way, our imports supplied 17,000,000 barrels of gasoline against 61,000,000 barrels exported.

It is estimated that about 90,000,000 barrels of fuel oil and crude were imported, 20,000,000 barrels being gas oil and fuel oil. Sales of fuel oil on the Atlantic Coast were about 115,000,000 barrels.

The importations undoubtedly had a depressing effect on the fuel oil market, but were unavoidable because fuel oil or fuel crude could be imported duty free and delivered to vessels engaged in foreign trade. Fuel oil prices for marine use are subject to world competition at foreign bunkering ports, more especially with the construction of refineries near Venezuela which are also potential competitors in the world gasoline market.

The importance of our petroleum exports in our foreign commerce can be gauged by the fact that they constitute the second largest item in our trade abroad, amounting in 1929 to $531,172,875.

Just as our automotive industry is finding its continuing expansion dependent upon exports our gasoline and lubricating oil industry must look more and more to increasing foreign use of our most profitable products.

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Some Aspects of Gasoline Absorption

Theoretical Data of Value in Design of Gasoline Plants and Vapor Recovery Systems at Refineries

By O. C. Brewster
Consulting Engineer, Casper, Wyo.

The writer was recently making a brief survey of the published work on the technology of the absorption of gasoline from natural or refinery gases and was struck by the paucity of articles dealing with the theoretical phase of this important question. The outstanding work noted was that of W. K. Lewis[1] in which is presented the groundwork for a systematic analysis of the problem where a number of absorbable components are present, as, of course, is always the case in the recovery of gasoline in field or refinery.

Starting with this basis, but being forced to reject some of the conclusions drawn by Doctor Lewis, the writer has been able to develop a number of fundamental concepts of the operation of the process of absorption, concepts covering the conditions existing throughout an absorption column, the effect of the number of steps (i.e., the number of bubble plates in a bubble column) used, the relative selectivity in the absorption of the various components under different conditions of number of plates, pressure and temperature and the effective limits of an operation.

These concepts have all been developed on a purely theoretical basis for the case of theoretically ideal equipment. They are, however, of such fundamental character that they should prove helpful to the experienced designer who should be able to apply the obvious and unavoidable departures of actual, practical equipment from the ideal.

Briefly summarized, a few of the more important relationships which may be established are listed below:

1. The concentration of a given component in the gas or absorber oil may be determined for any point in a column having from one to an infinite number of plates.

2. For a given extraction, E, of any one component the required absorber-oil to gas ratio, R_{os}, for a column of infinite ideal plates is equal to that required for a one plate column, R_1, multiplied by $(1 - E)$, or $R_{os} = R_1(1 - E)$. Thus for two columns, one with infinite plates and the second with one ideal plate, the first will require but 40 per cent of the oil to gas ratio necessary for the second in order to extract 60 per cent of a given component in each case. The oil to gas ratio for any finite number of plates will be intermediate and may be determined.

3. Complete extraction of a component is theoretically possible only with an infinite oil to gas ratio or with an infinite number of plates and an oil to gas ratio equal to or greater than P/π, where P is the vapor pressure of the pure component at the operating temperature, and π is the absolute pressure under which the system is operating.

4. The finite number of plates required to give any desired approach to the operation of infinite plates may be closely approximated.

5. For any given temperature the oil to gas ratio is inversely proportional to the absolute operating pressure and the selectivity of the system is not affected, either adversely or to our advantage.

6. The selectivity of a system is minimum with one plate and increases to a maximum with infinite plates. In the example worked out in this paper 50 per cent more propane is absorbed, and 30 per cent less pentane is absorbed with one plate than with infinite plates while operating to absorb a constant 40 per cent of butane under all conditions (see Figure 6).

7. The selectivity of a given system is improved by lowering the operating temperature.

[1]Chemical and Metallurgical Engineering, Vol. 35, No. 2 (Feb., 1928), pp. 93-95.

Equilibrium Curves

The method used by Lewis for establishing equilibrium curves showing equilibrium conditions for the gas and absorber oil gives an excellent approach to the problem and while, as he states, it is not theoretically correct in detail, for a lean gas the error becomes negligible and the simplification achieved by certain approximations far outweighs the slight error involved.

Let us assume that we have a gas containing certain desirable heavy products which we wish to extract by absorption in an absorbent initially free of these products, and, for greater simplicity, which has a negligible vapor pressure at the operating temperature. Let the analysis of this gas be:

a mol % methane
b mol % ethane
c mol % propane
d mol % n-butane
e mol % n-pentane

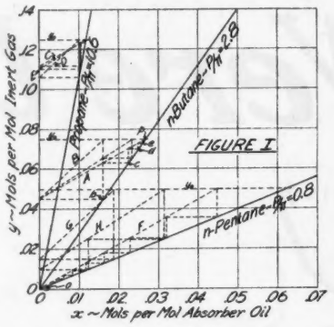
Since we assumed that the gas was lean we may say that the amount of methane is great with respect to the total and that this amount is substantially constant throughout the absorption column, i.e., a negligible amount with respect to the initial quantity will be absorbed. With only slightly greater error we may say that if the ethane represents a relatively large volume the same is true for this component and the methane and ethane may be taken together as representing a single inert gas which will be absorbed only in negligible quantities and thus, with a constant rate of input into the absorber, will pass through the column at the same constant rate at all points.

For any of the other components, let y be the molecular concentration of that component with respect to the inert gas. Thus for the inlet gas, the butane concentration, according to this definition is $y = d/(a + b)$. Furthermore, letting p equal the partial pressure of the component being considered, and π the absolute operating pressure of the system, we may say that $p = \pi y$ if we admit that the inert gas volume is great with respect to the total. (Of course, the true partial pressure of butane in the inlet gas is πd, whereas the equation above expresses it as $\pi d/(a + b)$ and approaches the true relation as $(a + b)$ approaches unity.)

That Raoult's Law holds with considerable accuracy for the hydrocarbons has been amply demonstrated and is accepted by Lewis and others.[2][3] Thus we may say that the partial pressure of the component under consideration when dissolved in the absorbent is $p = Px$, where P is the vapor pressure of the pure component at the operating temperature and x represents the molecular concentration of the component in the liquid with respect to the absorbent. Here again an error is introduced by not considering the total volume of the solution but, when the volume of the absorbent is great with respect to the total, the error becomes small as in the case of the gas. From the two expressions for p given above, we may say that, when equilibrium exists between liquid and gas, $p = Px = \pi y$, or,

$$\frac{P}{\pi} x = y \qquad (1)$$

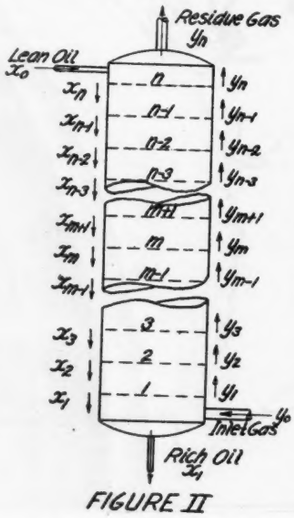
This expression shows the relationship between the concentration, y, of the component in the gas and that, x, in the liquid when equilibrium exists between the liquid and gas. It is linear, passes through the origin and has the slope P/π. Thus we may establish the equilibrium curves for the three products which will be absorbed in our system—propane, butane and pentane. Let us assume, for sake of definiteness, that π is 1 atmosphere, and temperature is 30° C. Then



for propane, P is 10.6 atmospheres; for n-butane, 2.8 atmospheres; and for n-pentane is 0.8 atmospheres.[3] Figure 1 shows the equilibrium curves for these components under the assumed conditions.

Oil to Gas Operating Ratio

For simplicity in considering the theoretical aspects of absorption let us assume that our absorbing column is of the plate type, each plate being ideal in the commonly accepted sense of the word (that is, one on which the overflow from the plate is in equilibrium with the gas or vapor rising from the plate), and that the temperature is maintained constant



throughout the column by some means. Such a column with the nomenclature used in this discussion is shown in Figure 2.

The quantity of inert gas and absorber oil have been shown to be constant at all points, thus, for the column as a whole, the quantity of the component extracted from the gas expressed in mols per unit time is $Q = G(y_o - y_n)$, where G represents the mols of inert gas passing through the column per unit time. Similarly, $Q = L(x_1 - x_o)$, where L represents the mols of liquid (absorber oil) passing down through the column per unit time. Then since it is quite obvious that the amount of the component given up by the gas must equal the amount absorbed by the oil,

$$G(y_o - y_n) = L(x_1 - x_o)$$

$$\text{or} \quad y_o - y_n = \frac{L}{G}(x_1 - x_o)$$

$$\text{or} \quad y_o - y_n = R(x_1 - x_o) \qquad (2)$$

where R is the oil to gas ratio, $\frac{L}{G}$.

Similarly, for any portion of the column, say for the plate m, we may say $G(y_{m-1} - y_m) = L(x_m - x_{m+1})$, or, for the portion of the column from the bottom to a point above the plate m, we may say,

$$G(y_o - y_m) = L(x_1 - x_{m+1})$$

$$\text{or} \quad y_o - y_m = R(x_1 - x_{m+1}) \qquad (3)$$

For any given set of conditions y_o and x_1 are constants, thus Equation 3 resolves itself into a linear equation with y_m and x_{m+1} as the variables and when plotted in Figure 1 is a straight line with R as the slope, passing through the ordinate at a value of y equal to that of the residue gas from the system. This is what Lewis calls the "operating line" for the system and states that it shows the condition of equilibrium in the column. This, however, is hardly the case. This line gives the locus of the value of y for any point and the value of x for the next equivalent plate above the point at which y is taken, in other words it represents the concentration of the component in the gas leaving any particular plate and the concentration in the liquid feed to that plate before it has contacted the gas and come into equilibrium with it. Stated still differently, the horizontal distance from this line to the equilibrium line represents the change in concentration that will occur in the liquid in passing through the next equivalent plate and the vertical distance from this line to the equilibrium line represents the change in concentration that will occur in the gas in passing through the next equivalent plate. As will be shown below, this line is of vital importance, but does not show, as stated by Lewis, the impossibility of securing equilibrium conditions, in fact, it is used throughout this discussion in connection with ideal operation where 100 per cent equilibrium is secured.

Conditions for Base Component

To clarify the discussion of the problem from this point let us first set up a hypothetical gas analysis and then proceed from that point to the special cases where infinite plates, one plate, and finite number of plates are used in the absorber.

TABLE 1—ANALYSIS OF INLET GAS

	% by vol.	Mol %	Mols per mol methane and ethane, y_o
Methane	50	50	...
Ethane	30	30	...
Propane	10	10	.125
n-Butane	6	6	.075
n-Pentane	4	4	.050

Still following Lewis' general method, we will further assume that we wish to absorb only 40 per cent of the butane, all that is possible of the pentane, and, of course, as little as possible of the propane. Setting out to design our system to give a fixed extraction of butane, we may consider this as the "base component," studying the conditions throughout the column with respect to this component and then proceeding to a study of the other two.

Having fixed the amount of butane to be extracted, we may determine at once the concentration, y_n, of this component in the residue gas.

$y_n = y_o(1 - E)$
$= .075 \times 0.6$
$= .045$ mols butane per mol inert gas in residue gas.

It is fairly obvious that, if an infinite

(Continued on Page 153)

[2]A. J. L. Hutchinson, The Oil and Gas Journal, Vol. 27, No. 21.
[3]W. J. Podbielniak, Ibid., Vol. 27, No. 28.

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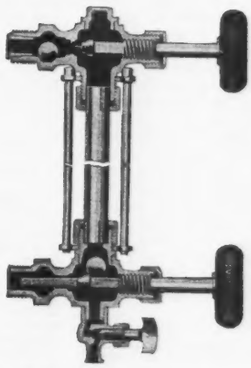

Safeguard Automatic Liquid Level Gauge

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Screw Plunger Grease Cup

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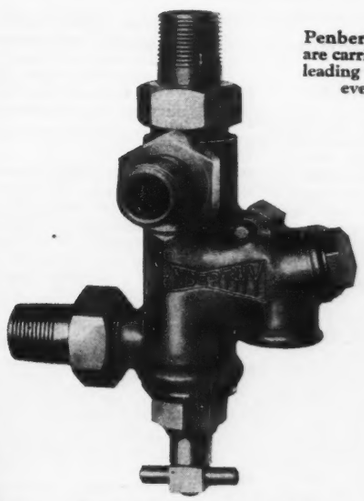
Spring Compression Grease Cup



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DETROIT

ESTABLISHED IN 1886

CANADIAN PLANT WINDSOR, ONT.

DECLINE IN COMPLETIONS AND NEW OPERATIONS IN JANUARY

The round up of field operations in January, east of California, shows a decline of 182 in completed wells when compared with December operations; 93 fewer dry holes and 83 fewer gas wells, and a falling off of 224 in new field operations. The gain in initial production, 420,838 bbls. over December, requires explanation.

The large volume of initial production credited to Oklahoma was from the Oklahoma City Field, where 35 wells were reported as completions in January. Most of these wells were brought in in November and December but were not reported in the completions of those months as they were kept shut in because of the curtailment order of the Oklahoma Corporation Commission. As they averaged 12,235 bbls. per well in initial production their total volume of 428,219 bbls. was sufficient to give January a very high rating in new production. These wells will be brought onto production in their turn, but will be permitted to produce only 25 per cent of their potential while the curtailment order is on, and may be cut even deeper if their combined production tends to put the total for Oklahoma above the pipe line requirements.

SUMMARY OF ALL FIELDS
WELLS COMPLETED

Field—	Comp.	Prod.	Dry	Gas
Eastern	329	1,813	18	53
Central Ohio	94	879	25	39
Lima	13	130	4	2
Indiana	17	114	2	8
Michigan	23	4,955	5	0
Illinois	25	390	7	0
Kentucky	61	1,245	15	6
Oklahoma	581	580,301	100	43
Kansas	64	3,610	42	4
Texas Panhandle	36	11,710	6	11
N. Central Texas	265	12,218	127	9
E. Central Texas	10	475	7	0
West Texas	67	40,453	20	0
Southwest Texas	76	30,334	31	15
East Texas	5	.....	1	4
Gulf Coas.	124	57,958	46	4
North Louisiana	55	517	13	23
Arkansas	12	711	5	0
Mississippi	4	.....	4	0
Wyoming	11	941	2	1
Montana	7	194	3	1
Colorado	6	165	4	0
New Mexico	13	6,045	5	0
Total Jan.	1,898	760,158	492	223
Total Dec.	1,880	339,320	585	306
Difference	182	420,838	93	83

RIGS AND WELLS DRILLING

Field—	Rigs	Drlg.	Total
Eastern	143	370	513
Central Ohio	75	175	250
Lima	3	29	32
Indiana	3	39	42
Michigan	52	122	174
Illinois	3	39	42
Kentucky	8	107	115
Alabama	2	4	6
Mississippi	1	16	17
Oklahoma	171	795	966
Kansas	67	258	325
Texas Panhandle	21	119	140
N. Central Texas	111	409	520
E. Central Texas	4	30	34
West Texas	48	243	291
Southwest Texas	46	131	177
East Texas	3	12	15
Gulf Coast	44	191	235
North Louisiana	60	119	179
Arkansas	10	46	56
Wyoming	21	130	151
Montana	18	78	96
Colorado	21	77	98
New Mexico	30	75	105
Utah	4	30	34
Total Jan.	969	3,644	4,613
Total Dec.	927	3,910	4,837
Difference	42	266	224

THE OIL MAN'S CALENDAR

February 1-8 — San Francisco, Pacific Automobile Show, Civic Auditorium.

February 11-12 — Sioux Falls, S. Dak., South Dakota Independent Oil Men's Association, Carpenter Hotel.

February 11-12 — Des Moines, Iowa, Iowa Petroleum Association, Fort Des Moines Hotel.

February 11—New York, joint meeting of General Committees A.P.I., Divisions of Production, Refining and Marketing, A.P.I. headquarters.

February 17-20—Yew York, One hundred thirty-ninth meeting, American Institute of Mining and Metallurgical Engineers, Engineering Societies Building.

February 19-21 — Columbus, Ohio, Ohio Petroleum Marketers Association, Deshler-Warwick Hotel.

February 26-27—Springfield, Ill., meeting, Illinois Petroleum Marketers, Pere Marquette Hotel.

March 10-12—Shreveport, La., convention, Western Petroleum Refiners Association.

March 11-12—Philadelphia, semiannual convention, Pennsylvania Independent Oil Men's Association, Elks Hotel.

March 12-14—Enid, Okla., Farm Machinery and Tractor Show.

March 13-26—Los Angeles Oil Equipment and Engineering Exposition, Shrine Auditorium.

March 19-21—Detroit, convention, Michigan Oil Men's Association, Statler Hotel.

March 20-22—New Orleans, La., American Association of Petroleum Geologists, Roosevelt Hotel.

April 5—New York, 50th anniversary celebration, American Society of Mechanical Engineers.

April 5-13—Detroit, All American Aircraft Show.

April 7—Pittsburgh, Pa., meeting and election, Eastern District, Division of Production, American Petroleum Institute, William Penn Hotel.

April 7-11—Atlanta, Ga., 79th meeting, American Chemical Society.

April 7-12—Chicago, annual meeting, American Oil Burner Association, Stevens Hotel.

May 5-8—New Orleans, Western Natural Gas Convention.

Late Fields

PANHANDLE

DALLAS, Tex., Feb. 4.—Magnolia Petroleum Co.'s No. 3 Wright, SW, Section 13, Block 3, H.&G.N. Survey, Gray County, topped granite wash pay at 2,830-50 feet and was bottomed at latter depth. It flowed 7,000 bbls. the first 24 hours, with 4,500,000 feet of gas. It flowed 6,480 bbls. the second 24 hours.

WEST TEXAS

FORT WORTH, Tex., Feb. 4.—Cosden Oil Co.'s No. 1-B University, Section 2, Penn Pool, Ector County, was drilled deeper from 3,635-78 feet encountering increase from 3,640-78 feet, total depth 3,678 feet, increased 100 bbls.

SOUTHWEST TEXAS

SAN ANTONIO, Tex., Feb. 4.—Houston Oil Co.'s No. 1 Wormser Holbien in northwestern Brooks County, drilled out plug and is flowing at the rate of 300 bbls. daily. Blair and Acklin's No. 2 Trevino, Survey 66, in Zapata County, at 1,251 feet is standing full of oil in semiwildcat territory.

Total depth Houston Oil Co.'s No. 1 McKinney in Bee County is 3,870 feet. Union Producing Co.'s No. 6 Ray, 1¾ miles northeast of Houston Oil Co.'s No. 1 McKinney, at total depth 4,156 feet on drill stem test showed 60 feet of oil and 1,400 feet of salt water. Test is 1,200 feet east of same company's No. 2 Ray, discovery gas well at 2,890 feet.

KANSAS

Producers & Refiners Corp.'s No. 1 Thompson in Section 21-20-10w, southwestern Rice County, has a hole full of oil from the Simpson at 3,330-31 feet. The oil is coming from a new formation in this area. The discovery well in the district was completed by Slick, Pryor & Lockhart in the shallow sand several months ago and is still making about 100 bbls. a day. It is an offset to the Producers & Refiners Corp.'s well, which was dry in the same horizon and drilled deeper.

GULF COAST

HOUSTON, Tex., Feb. 4.—At the new Sheeks or Esperson Field in western Liberty County, Cranfill & Reynolds Oil Co.'s No. 5 Esperson was completed during the week flowing 312 bbls. pipe line oil the first 24 hours. This well, in the northeast corner of the M. Duncan Survey, is the south offset to the same company's No. 1 Davis, which recently extended the production of the field nearly a half mile to the northeast. It is the fifth producer in the field, all of which have made fairly consistent wells although not having large flush production. One joint of 4½-inch screen was set in this well at a total depth of 2,315 feet.

Shell Petroleum Corp.'s No. 12 Watkins, deep wildcat on the south side of the Black Bayou Dome, Cameron Parish, after being deepened from 5,221 feet to 5,234 feet, flowed 500 bbls. the first day but increased its production to approximately 700 bbls. with a small percentage of water. This well originally was completed last November and flowed 900 bbls. daily for several days and sanded up. Oil in this well is 26.1 gravity at 72 degrees and pressure of the well is 319 pounds.

(Continued on Page 146)

High Spots in Field News

NORTH LOUISIANA-ARKANSAS

Zwolle gusher and 10,000-acre block sold for $3,000,000.

Sugar Creek area produces its best gasser.

KANSAS

Producers & Refiners Corp.'s well in southwestern Rice County has hole full of oil from the Simpson at 3,330-31 feet, coming from a new formation in this area.

ROCKY MOUNTAIN AREA

Following completion of well in Hobbs area, Lea County, New Mexico, gauging 8,585 bbls. operators are seeking curtailment plan. Two other good producers in Lea County.

EAST CENTRAL TEXAS

Two more producers in Van Pool, Van Zandt County. Pure Oil Co.'s No. 1 Wells flows 1,218 bbls. in 24 hours. No. 1 Magers, north of discovery, started filling with oil, making one head.

GULF COAST

Refugio district showing great activity. New pipe line to Gulf nearing completion.

Sun Oil Co.'s well in Humble Pool increasing production, now better than 2,200 bbls.

CALIFORNIA

Santa Fe Springs agreement, expiring February 1, likely to be continued for 90 days, but with several refusing to sign.

Secretary Wilbur asks Attorney General Mitchell to intervene in Kettleman Hills injunction suit on behalf of conservation plan.

NORTH TEXAS AND PANHANDLE

Extension of Rock Crossing Pool in Wilbarger County.

Deepening of wells in Gray County has varying results.

Magnolia company's well in Gray County flows 7,000 bbls. first 24 hours with 4,500,000 feet of gas and 6,480 bbls. second 24 hours.

SOUTHWEST TEXAS

One well in Bee County flowing at rate of 600 bbls. and a second with 60 feet of oil and 1,400 feet of salt water, 1,200 feet from discovery.

Houston Oil Co.'s No. 1 Wormser Holbien, northwestern Brooks County, flows 300 bbls.

Zapata County well standing full of oil in semi-wildcat territory.

WEST TEXAS

Cosden Oil Co.'s No. 1-B University, Penn Pool, Ector County, drilled deeper, increased 100 bbls., total depth 3,678 feet.

Second well in World Pool, Glasscock County, has 1,100 feet of fluid in hole.

Three more possible producers in Grand Falls Pool, Ward County.

Two shallow wells in Toborg Pool, northwest of Yates Field.

OKLAHOMA

New wildcat wells south of old Earlsboro Pool are shut down. Magnolia company's well swabbed 460 bbls. in 8 hours and 594 bbls. in 15 hours.

Sinclair company's Woods County wildcat making 15,000,000 feet of gas and spraying water, fourth showing of gas while drilling.

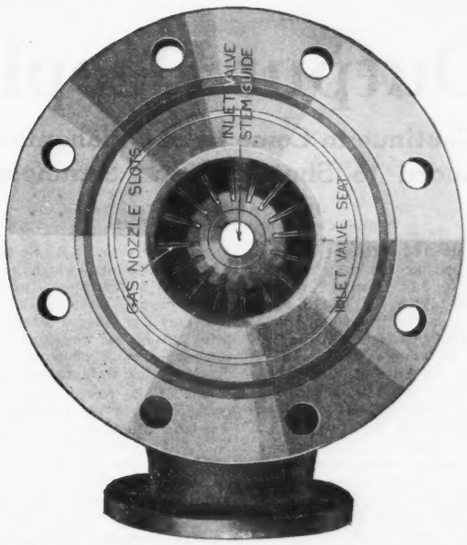
McCulloch Oil Co. well in Konawa Pool, Seminole County, extends production three-quarters of a mile southeast.

A.P.I. WEEKLY REFINERY STATISTICS

The weekly report made to the American Petroleum Institute on refinery statistics—crude runs to stills, gasoline stocks and gas and fuel oil stocks—for the week ending February 1 follows:

	(1)	(2)	(3)	(4)
East Coast	100.0	3,250,000	7,712,000	7,017,000
Appalachian	91.0	589,800	1,480,000	723,000
Indiana, Illinois, Kentucky	98.6	2,064,500	6,797,000	3,237,000
Oklahoma, Kansas, Missouri	88.4	1,822,400	4,390,000	3,021,000
Texas	90.3	3,796,000	8,162,000	12,416,000
Louisiana and Arkansas	96.8	1,276,800	2,425,000	4,221,000
Rocky Mountain	93.5	385,100	2,576,000	1,017,000
California	98.0	4,154,500	15,638,000	108,892,000
Total United States	95.0	17,339,100	49,180,000	140,544,000
Texas Gulf Coast	99.4	3,013,200	7,084,000	9,644,000
Louisiana Gulf Coast	100.0	810,000	2,070,000	3,407,000

(1) Per cent refinery capacity represented. (2) Crude runs to stills. (3) Gasoline stocks. (4) Gas and fuel oil stocks.



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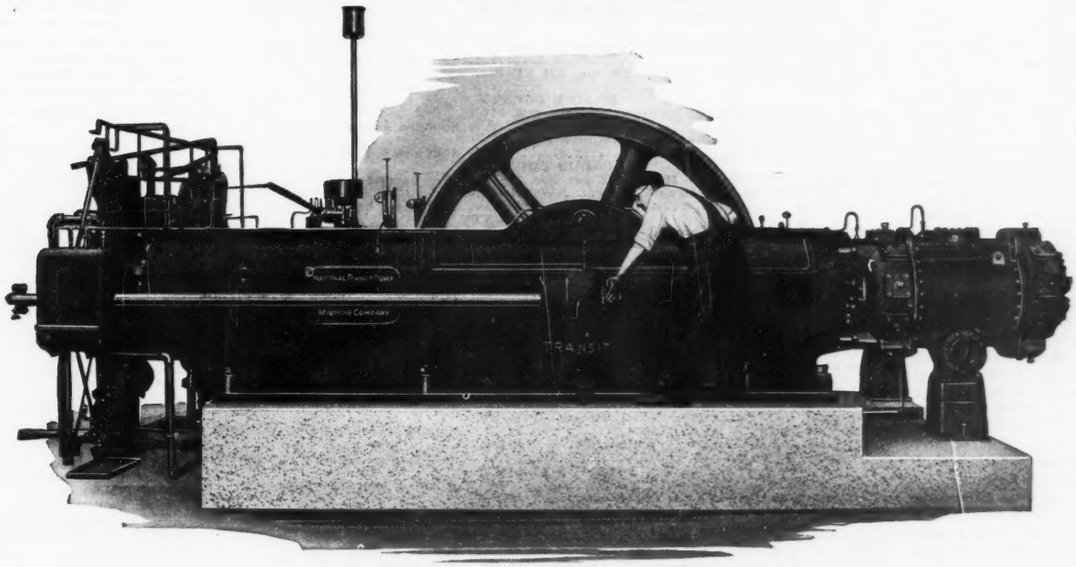

Fig. 1658
TRANSIT 17 x 24", Model 26 Gas Engine, with compressors. Side View.

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St. Louis, Mo.

Oklahoma Output Deeply Curtailed

Big Wells Continue to Come In in Oklahoma City Pool, and Are Added to Shut-In List. Seminole Declines

By W. A. Spinney
Staff Correspondent, Oklahoma Fields

The production of Oklahoma declined approximately 42,000 bbls. a day bringing the State's daily average to 612,000 bbls. a day for the week ending February 1.

Operators in the Oklahoma City Pool alone curtailed the production to a new low last Friday, January 31, when the field gauged only 32,000 bbls. from 12 wells. The next day's production was 37,000 bbls. from 13 wells. Sunday's production was 27,946 bbls. from 11 wells. The daily average production of the Oklahoma City Pool for the week was 57,000 bbls. which is a decline of 26,000 bbls. a day. The Greater Seminole Field shows a decline of 26,000 bbls. a day for week ending February 1.

Indian Territory Illuminating Oil Co. Saturday brought another well on to production in the Oklahoma City Pool. The well was No. 1 Alice Bodine, NE cor. SE, Section 24-11-3w. It made 12,255 bbls. the first 14 hours. It was shut in when it began cutting about 4 per cent. The production is from the Arbuckle lime at a total depth of 6,525 feet.

Sinclair Oil & Gas Co.'s No. 2 Kinter, SW cor. SE, Section 30-11-2w, made 165 bbls. of oil the first 30 minutes after being deepened 122 feet, to a total depth of 6,457 feet. The well was first completed November 19, 1929, when it made 7,500 bbls. the first 24 hours from the Simpson sand.

A new pool has apparently been opened south of the old production in the Earlsboro Pool. Two wildcat tests in that area found oil in the Wilcox sand. New locations have been staked for additional tests. Magnolia Petroleum Co.'s No. 1 Grounds, NE cor. NW, Section 23-9-5, had the Wilcox sand at 4,126-24 feet. The well made 660 bbls. the first 12 hours. It may be shot and the gas lift installed. It has been estimated to be a 1,000-bbl. well or better. The other new well in the district was the Amerada Petroleum Corp. and Dixie Oil Co.'s No. 1 Edwards, SE cor. NE NE, Section 22-9-5, Seminole County. The well made 250 bbls. from the Wilcox sand at 4,182-98 feet. It will be shot and a production test made.

Two new gushers were completed in the central part of the Oklahoma City Field the last of the week by the Indian Territory Illuminating Oil Co. and others. Their No. 2 Wilke-Anderson, NE cor. SE NE, Section 25-11-3w, started flowing over the crown block after being bailed down about 1,000 feet. The well made 253 bbls. in 15 minutes, and 5,933 bbls. in 14½ hours and then shut in. The volume of gas was estimated at 25,000,000 feet. The well is producing from the Silicious lime at a total depth of 6,490 feet. The 6-inch casing was landed at 6,431 feet. The other well was No. 8 Trosper, NW cor. SW, Section 13-11-3w. It was bailed down 2,000 feet before it started to flow out the balance of the mud. When all the surrounding drilling tests were shut down the well was opened allowing it to clean itself before turning the fluid into the stock tanks. The first 30 minutes' gauge was 138 bbls. and the first 15-hour gauge showed 3,549 bbls., with an estimated gas volume of 10,000,000 feet. It is the second Simpson sand well on the lease. The total depth is 6,360 feet, and the 6-inch casing is landed at 6,313 feet. The lease of 80 acres is located south of the Trosper Park property, the municipal park playground, and is divided into small tracts with 163 different owners.

A few days earlier the same companies completed No. 3 G. Button, NW cor. SW, Section 19-11-2w, for 11,118 bbls. the first 24 hours. The gas volume was estimated at 40,000,000 feet. It made 230 bbls. the first 40 minutes. The well is producing from the Silicious lime at a total depth of 6,516 feet. Six-inch casing was landed at 6,050 feet. It was the third well completed on the lease.

Three other tests have reached the pay horizon. After being bailed down they are only showing a small amount of oil. Indian Territory Illuminating Oil Co.'s No. 3 Emerson-Joyce, SE cor. NE NE, Section 25-11-3w, was bailed down. The bailing has been in progress for the last week and has resulted in a small showing of oil. Same company's No. 3 Kuhlhoff-Henning, SE cor. SW SE, Section 24-11-3w, was swabbing mostly water. Same firm's No. 1 Pearl Trosper, NW cor., Section 18-11-2w, was preparing to drill deeper from a total depth of 6,442 feet. Some express the opinion this test is on or near the fault line on the east side of the field. It had a small showing of oil and gas when the fluid was bailed down.

Deep Failure in Cleveland County

Prairie Oil & Gas Co. and others' No. 1 Sudik, C NE NE, Section 8-10-2w, Cleveland County, which has been shut down for a few weeks with a hole of water in the Wilcox sand at 7,716-20 feet may be plugged back. Plans were being made to whipstock the test at some of the oil showings at shallower depths which were passed up.

One of the recent wells to be put on the gas lift in the Oklahoma City Pool was the Mid-Kansas Oil & Gas Co.'s No. 3 Fortson, NW cor. NE, Section 24-11-3w. The well made 1,851 bbls. of oil and considerable water the first day's gauge. No estimate was made of the water.

Wirt Franklin Petroleum Corp. has two tests that are expected to be drilled into the pay horizon in a few weeks. No. 3 Lowery, in approximately SW cor. NW NW, Section 12-11-3w, has cemented the last string of casing at 6,427 feet, and is shut down. No. 4 in approximately SW cor. NE NW, Section 12-11-3w, had a showing of oil and gas at 6,262-68 feet, and was drilling deeper at 6,300 feet.

Indian Territory Illuminating Oil Co.'s No. 1 B. Johnson, NE cor. NW, Section 25-11-3w, once considered the largest producer in the Oklahoma City Field, has been giving indications of returning to its former prominence. The well averaged as high as 260 bbls. an hour one day last week. It was completed in July, 1929, and started at 800 bbls. an hour, but sand damaged the connections and it was shut in. The owners used several methods to reduce the flow of sand and apparently reduced the flow of oil at the same time. The well made an estimate of 5 bbls. of sand an hour and 2,178 bbls. of oil in 10 hours before being shut in again. Some believe if it were possible to eliminate the flow of sand the production would more than double itself.

Seventy-four Tests Near Completion

Seventy-four tests were drilling below the 6,000-foot level in the Oklahoma City Pool on Saturday. Several of the operations are due for testing in the next few days. Indian Territory Illuminating Oil Co.'s No. 5 A. Bodine, NE cor. SE, Section 24-11-3w, has drilled the cement plug at a total depth of 6,525 feet, and was making connections to bail the fluid. Same company's No. 2 Bodine-Anderson, SE cor. NE NW, Section 30-11-2w, was drilling the cement plug at a total depth of 6,600 feet. No. 3 Bodine-Anderson, SW cor. NE NW, Section 30-11-2w, was cleaning out at a total depth of 6,648 feet. The test has been bailing for a week.

The wildcat operation near Jones, in Oklahoma County, being drilled by Tom Slick Oil Co. and others, No. 1 Martin, NW cor., Section 13-13-1w, is shut down waiting for the cement to set at a total depth of 6,966 feet. It may be plugged back to the gas horizon. Magnolia Petroleum Co.'s No. 1 Noble, NW cor. SW SW, Section 30-12-2w, was cleaning out at 7,173 feet.

Shut-In Initial Production

The initial production of the shut-in wells in the Oklahoma City Pool that have been allowed to produce 24 hours or less was 382,333 bbls. Several new wells were added to the list last week. The initial production of each well was as follows:

Company, lease—	Well No.	Bbls.
Shell, Petty	5	65
I.T.I.O., Trosper	3	8,620
Shell, Petty	4	700
Sinclair, Stamper	6	2,500
I.T.I.O., Verne	1	2,701
I.T.I.O., Verne	2	30,833
Skelly, Hoopes	1	32,937
I.T.I.O., Speegle	1	1,298
Coline, Warren	2	25,454
Slick, Zerkerle	1	24,062
I.T.I.O., Peterson	1	1,025
I.T.I.O., E. Fortson	1	14,697
I.T.I.O., Wheeler	1	6,747
I.T.I.O., N. Emerson	2	2,750
I.T.I.O., Jennings	1	23,285
Prairie, Hiddleston	4	15,815
Coline, Warren	1	24,746
I.T.I.O., Johnson	2	946
I.T.I.O., Wheeler	2	22,846
Shell, Petty	6	3,444
Sinclair, Stamper	4	690
I.T.I.O., Canfield	1	16,948
I.T.I.O., Jennings	3	18,307
Cromwell, Trosper	11	*7,653
I.T.I.O., Mackey	1	97
Coline, Clauer	3	4,609
I.T.I.O., Fortson-Farley	1	8,995
I.T.I.O., Canfield-Button	1	15,675
Shell, Petty	7	1,197
I.T.I.O., L. Farley	1	30,438
I.T.I.O., Drake	2	8,780
I.T.I.O., Watters	3	1,000
I.T.I.O., G. Button	3	11,118
I.T.I.O., A. Bodine	5	†12,255
Total	34	382,333

*18 hours; †14 hours.

Greater Seminole Field

Oil production in the Greater Seminole area showed a further decline in the week ending January 29. The average decline amounts to more than 26,000 bbls. a day. It is the second week in succession in which production in this area has shown a decline. The efforts of oil operators to curtail is being reflected in the daily aver-

(Continued on Page 68)

WILDCAT OPERATIONS IN OKLAHOMA

(Descriptions are East and North unless marked otherwise)

NORTHERN OKLAHOMA

ALFALFA COUNTY

Company, farm and location—	Remarks:
Smith Bros.' No. 1 Forbes, SE cor. NW NW, Sec. 12-27-11w	Shut down 1,232 ft.
J. W. Bailey's No. 1 Acre, SW cor. NE Sec. 14-24-11w	Rigging up standard tools 4,660 ft.

BECKHAM COUNTY

Kay and others' No. 1 Martin, C E half E half NW Sec. 32-8-24w	Shut down 2,480 ft.
Producers Exploration Co.'s No. 1 Seidell, SE cor. SW SW Sec. 17-9-22w	Shut down 2,402 ft.
Carson and others' No. 1 Danby, SW cor. SE NE Sec. 20-8-22w	Shut down 1,575 ft.

BLAINE COUNTY

Lowen and others' No. 1 Unknown, NW cor. SW NW Sec. 27-16-11w	Spudded and shut down.
Washoma Oil Co. and others' No. 1 Phillips, C NW SW Sec. 12-19-10w	Shut down 2,935 ft.

CADDO COUNTY

Abernathy & Brown's No. 1 Horton, SE cor. Sec. 8-6-13w	Shut down 525 ft.
W. J. Hartley's No. 1 Galbreath, SE cor. NW SE Sec. 29-5-12w	Shut down 3,394 ft.

CLEVELAND COUNTY

Harris et al's No. 1 Highbee, SE NW Sec. 20-6-1	Rig.
Daniels & LeWright's No. 1 Vandever, C SW Sec. 15-7-1w	Shut down 3,130 ft.
Phillips Pet. and T. B. Slick's No. 1 Sudick, NE cor. NE Sec. 8-10-2w	Wilcox 7,716-20 ft.; water; shut down.

COAL COUNTY

W. E. McGraw's No. 1 King, C SW NE Sec. 11-1-8e	Shut down 1,235 ft.

COMANCHE COUNTY

G. W. Stogner's No. 1 Doebel, C SW SW Sec. 3-3-9w	Shut down 150 ft.
Green and others' No. 1 Wilson, C NE SW Sec. 14-1-12w	Shut down 4,055 ft.

GARFIELD COUNTY

Shell Petroleum Corp.'s No. 1 Loomis, C NW NW Sec. 32-23-4w	Shut down 200 ft.
Continental and Barnsdall's No. 1 Brown, CNL SW Sec. 10-20-4w	Rigging up standard tools 4,725 ft.
E. L. Love and others' No. 1 White, SE cor. NW Sec. 9-24-6w	Shut down 5,566 ft.
J. V. Bailey's No. 1 Hubbard, C NE NW Sec. 1-10-6w	Spudded and shut down.
J. M. Henry and others' No. 1 Abraham, SE cor. NW Sec. 4-5-8w	Rig.

GRANT COUNTY

Gypsy Oil Co.'s No. 1 Belderbeck, C SE SE Sec. 27-28-7w	Drlg. 5,295 ft.
Bailey's No. 1 Stover, C SW SE Sec. 20-27-5w	Rig on ground.
Baucher et al's No. 1 Deadman, SW SE Sec. 12-28-4w	Shut down 4,737 ft.
Cowden and others' No. 2 Vollmer, CEL NE SW Sec. 22-25-4w	Shut down 5,640 ft.
Otstot's No. 1 Tabor, C NE NE SE Sec. 23-26-3w	Shut down 3,250 ft.

GARVIN COUNTY

Nelson et al's No. 1 Strickland, NE SW Sec. 10-4-3	Shut down 109 ft.
Pickham-Harris' No. 1 Community Gaines, C NW NE Sec. 11-4-1	Rig.

GREER COUNTY

Helmerich & Payne's No. 1 Henck, NW cor. Sec. 23-6-24w	Fishing 2,205 ft.
I. T. I. O. and others' No. 1 fee, C SW NE Sec. 17-6-24w	Shut down 2,090 ft.

HARMON COUNTY

Harmon-Tex Oil Co.'s No. 1 Hoadley, NE cor. Sec. 17-4-24w	Fishing 700 ft.
S. M. Stauffer's No. 1 Castleman, SW NE Sec. 8-4-26w	Shut down 625 ft.

HARPER COUNTY

Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Sec. 14-26-24w	Drlg. 6,720 ft.

HASKELL COUNTY

Holden's No. 1 Phillip, SE cor. Sec. 3-9-18e	Shut down 1,860 ft.

(Continued on Page 163)

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TIMKEN *Tapered Roller* **BEARINGS**

Production Held at Level in Kansas

Fifty Drilling Operations in Voshel Pool in McPherson County Expected to Increase Potential in March

By W. A. Spinney
Staff Correspondent, Kansas Fields

With the production of Kansas averaging 110,000 bbls. daily during the week operators have been holding the production about steady for the past two weeks. Some express the opinion that the State's production is due for an increase by March 1, from the new operations in the Voshel Pool, McPherson County. Unexpected dry holes in the new Shurr Pool in Rice County were among the important events of the week. A new wildcat location in western Kansas was announced in Scott County. Several wildcat dry holes were completed and abandoned during the week.

The Voshel Pool in McPherson County, with 50 operations, is the only active county in the State at the present time. The seven completed wells have a potential production of approximately 9,500 bbls. a day. The latest well is the Prairie Oil & Gas Co.'s No. 1 Stuckey, NW cor. SW, Section 10-21-3w, McPherson County, made 1,530 bbls. the first 24 hours and a total of 5,070 bbls. the first 72 hours before being pinched in to 50 bbls. a day. Sinclair Oil & Gas Co.'s No. 2 Voshel, in Section 10-21-3w, made 90 bbls. in three hours before being shut in. The Mid-Kansas Oil & Gas Co. has five tests drilling on its lease in the NE, Section 9-21-3w. Aladdin Petroleum Co. and E. W. Marland, Inc., are seeking to extend production to the east in the Voshel Pool with its No. 1 Krehbiel, NW cor. SW SE, Section 10-21-3w. Wentz Oil Corp.'s No. 1 Sperling, NE cor. SE SW, Section 9-21-3w, is a new test on the southwest edge of the pool.

Failure in Shurr Pool

The second dry hole for the Shurr Pool in Rice County was completed last week. Independent Oil & Gas Co.'s No. 1 Mezger, SW cor. NE, Section 21-20-10w, Rice County, encountered water in sand at 3,296-98 feet. Producers & Refiners Corp.'s No. 1 Thompson, SE cor. NW, Section 21-20-10w, Rice County, also found water in sand at 3,296-3,300 feet. Both of these tests offset the producing well of Slick, Pryor & Lockhart which is making about 100 bbls. a day. Vickers Petroleum Co.'s No. 1 Mezger, SW cor. NE, Section 21-20-10w, also an offset to the producing well, was fishing at 2,225 feet. The hope of finding production in the area is toward the south. Some geologists were of the opinion the producing well is on the north edge of the structure and express no surprise the two offsets were dry. The Gypsy Oil Co. has a core drilled structure to the south and many believe the production will extend in this direction. Others express the opinion that the production may be spotted in the area on account of the production coming from the conglomerate horizon.

New Locations in Sedgwick

Two new locations were made in Sedgwick County and efforts to extend production in the Valley Center Pool in Sedgwick County failed when water was encountered. Shell Petroleum Corp. was preparing to move in a rig for No. 1 Stoller, SW cor. NE SW, Section 11-26-2. Same company's No. 1 Brown, in the Greenwich Townsite in Section 15-26-2, was a location. The development west of Wichita, in the Curry Pool, has been delayed by the fishing job, in C. B. Davis and others' No. 1 Van Arsdale, NE cor. NW NW, Section 11-27-1w. It was drilling by a bit at a total depth of 2,021 feet. East of the Greenwich Townsite the Amerada Petroleum Corp. and Dixie Oil Co.'s No. 1 Foulston, SW cor. NW, Section 11-26-2, was fishing for casing at a total depth of 3,226 feet.

Prairie Oil & Gas Co. and Slick, Pryor & Lockhart failed to extend production in the Valley Center Pool, Sedgwick County. The test was No. 1 H. B. Smyser, SE cor. SW SW, Section 36-25-1w. It encountered a hole full of water at 3,478 feet. The test is the most northwesterly drilled in the Valley Center Pool. It was started after Wentz Oil Corp.'s wells were successful in finding production on the northwest side of the pool. Wentz Oil Corp. has later abandoned two wells on the Bright lease which adjoins the Prairie Oil & Gas Co. and others' Smyser property on the south. Prairie Oil & Gas Co. and Slick, Pryor & Lockhart's No. 3 Smyser, SE cor. SW, Section 36-25-1w, made 5 bbls. of oil and 45 bbls. of water the first 24 hours from the pay at 3,418-21 feet.

Interest in Kingman County

Kingman County, which attracted considerable attention six or seven years ago is again being closely watched. The White Eagle Oil & Refining Co.'s No. 1 Lorenz, in Section 27-26-5w, is being underreamed to a total depth of 4,135 feet. The test encountered water at 4,128-34 feet. The owners plan to deepen it to the Wilcox sand. D. P. Fleeger's No. 1 Ashcraft, SE cor. SW NE, Section 16-28-7w, Kingman County, is shut down with a hole full of water in the Wilcox sand at 4,343-50 feet. The total depth is 4,445 feet.

Good Well in Greenwood County

Empire Oil & Refining Co. has completed another big well in the Hamilton area in northern Greenwood County. The new well is No. 7 C. Patterson, in Section 36-23-11, Greenwood County. The oil was found in the Bartlesville sand at 1,707-89 feet, and the total depth is 1,794 feet. After shooting with 160 quarts it swabbed 400 bbls. It was the second well completed in the area during the week. Prairie Oil & Gas Co. and A. M. Landon's No. 2 Newhouse, on the north line of Section 1-24-11, Greenwood County, offsetting the Empire Oil & Refining Co.'s well, had the Bartlesville sand at 1,718-88 feet. Oil rose in the hole 900 feet. The test was shot and the operators were cleaning out. The same operators' No. 1 Newhouse, was a 200-bbl. well.

To the northeast of the above pool at the south end of the Seeley Pool, Simmons & Rhodes and Phillips Petroleum Co. are building a rig for No. 2 Patterson, NW cor. SE SW, Section 22-23-11, Greenwood County. The location was made a month ago but the bad weather has delayed the plans to proceed with the test.

Derby Oil Co. has a new well 4 miles northeast of Quincy in Section 25-24-12, Greenwood County. It is estimated to be good for 35 to 40 bbls. from the pay horizon at 1,618-49 feet.

Silicious Lime Test

The fourth test to be drilled to the Wilcox sand in the new pool west of Augusta, in Butler County, had a small showing of oil in that sand and is drilling deeper to the Silicious lime. It was estimated to be a 25-bbl. showing after a shot. The test is the Aladdin Petroleum Corp.'s No. 2 Klingler, NE cor. SE NE, Section 24-27-3, Butler County. The casing has been landed preparatory to drilling deeper, at a total depth of 2,981 feet. The test is located about a half mile northeast of the same company's No. 1 Bausinger, the discovery well in the district. The same company's No. 1 Klingler is making about 80 bbls. a day and the No. 1 Sharon is pumping about 20 bbls. a day.

Lario Oil & Gas Co. has a rig on the ground for its No. 1 Greer, NW cor. SW, Section 23-27-5, Butler County, Haverhill district. The test may extend production in the Bartlesville sand in the area. It is located one location east of the Empire Oil & Refining Co.'s No. 13 Cranston, which is estimated as a 50-bbl. well. Numerous attempts have been made to extend the production in the Haverhill district beyond the limits of the Empire Oil & Refining Co.'s block, but that company has the only production in the district.

Revival in Potwin Area

The Potwin area has been attracting attention since the Southbrook Oil Co.'s No. 1 Joseph, in Section 25-24-3, Butler County, found a showing of high gravity oil at 2,695 feet which some estimate at 100 bbls. a day. Bad weather conditions and mechanical troubles have delayed the completion of the well, which some predict may be the forerunner of a drilling campaign. The oil tests 45 degrees gravity. T. C. Johnson's No. 2 Beadles, in Section 8-27-6, in the Leon district, Butler County, was estimated at 75 bbls. a day. The casing collapsed at 1,585 feet, and a new hole is being drilled past the casing.

Three deep dry holes were completed in the western part of the State last week. Phillips Petroleum Co.'s No. 1 Kidder, NW cor., Section 20-12-17w, Ellis County, Barbara Oil Co.'s No. 3 Carter, SW cor. SE SE, Section 2-33-13w, Barber County, and Burford & Brim's No. 1 Boxa, NE cor. SW SE, Section 22-9-17w, Rooks County.

The deepest test in the State is being drilled by the Watchorn Oil & Gas Co., No. 2 Morrison, NW cor. NE, Section 20-32-21w, Clark County. The test is shut down at a total depth of 6,065 feet. It is expected to be drilled deeper when moderate weather returns.

Deep Hole Fishing Job Completed

Skelly Oil Co.'s No. 1 Birkett, NE cor. SW, Section 30-24-7w, Reno County, has completed the fishing job. The tools were lost in the hole about two months ago at a total depth of 4,137 feet. The wildcat test reached the Viola at 4,135 feet, and has been fishing for tools for 50 days. The test is located northeast of Arlington, and southwest of Hutchinson, in Reno County.

Southeast of Newton in Harvey County, E. W. Marland, Inc.'s No. 1 Chambers, NE cor. SE NE, Section 8-24-2, has the top of the Viola lime at 3,255 feet. The wildcat test is located about 10 miles north of the Goodrich Pool in Sedgwick County.

The Kansas City lime has again been found productive in the Grenola Pool in Elk County. Minnehoma Oil & Gas Co.'s No. 5 Denton, CNL SW SW, Section 3-31-8, Elk County, started to produce 20 bbls. an hour from the pay horizon at 1,930-50 feet. Operators in the district are recovering approximately 1,000 bbls. a day from the Kansas City lime horizon.

Phillips Petroleum Co. has purchased a third interest in the 6,000-acre block and the wildcat test of Robertson & Hinkle, No. 1 Powell, SE cor., Section 11-32-10w, Barber County. The test is shut down at 3,955 feet because of cold weather. The test has had several showings of oil and gas in shallow sands and is considered to be favorably located on structure. The Phillips Petroleum Co. plan to operate the block.

A new wildcat test has been announced in Scott County in western Kansas. The Dry Lake Enterprise Co. is digging cellar for its No. 1 Peterson, C NW, Section 16-20-31w. The test will be located about 25 miles north of Garden City, in Finney County. It is the only test in the county and is being drilled on a 5,000-acre block. It is 75 miles from the nearest production, which is in Trego County.

Butler County

Empire Oil & Refining Co. has the rig up for No. 19 Houston, NW cor. NE SW, Section 19-26-5. No. 94 Koog-

(Continued on Page 120)

WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless otherwise marked)

Company, farm and location—	Remarks:
BARBER COUNTY	
Skelly Oil Co.'s No. 1 Temple Ranch, Sec. 13-34-15w	Shut down 4,580 ft.
Robertson et al's No. 1 Powell, SE cor. SE Sec. 11-32-10w	Drlg. 3,875 ft.
BARTON COUNTY	
Prairie's No. 1 Davidson, NW SE Sec. 4-16-11w	Shut down 520 ft.
Slick et al's No. 1 Sweeney, SW NE Sec. 23-17-11w	Shut down 3,110 ft.
Everett & Wiley's No. 1 Ward, NW cor. SW Sec. 12-20-13w	Shut down 3,948 ft.
BUTLER COUNTY	
Shell Petroleum Corp.'s No. 1 Harper, SW NE Sec. 35-26-3	Drlg. 2,085 ft.
Martin et al's No. 1 Flanigan, C SW SE SW Sec. 29-27-3	Shut down 1,930 ft.
CHASE COUNTY	
Urschell et al's No. 1 Lipps, C SW SW Sec. 27-18-6	Drlg. 110 ft.
Steinbuckel et al's No. 1 Stephenson, NE SW Sec. 4-20-6	Shut down 500 ft.
Steinbuckel et al's No. 1 Cook, SE cor. Sec. 21-19-8	Shut down 900 ft.
E. W. Marland, Inc.'s No. 1 Altemus, SE NE Sec. 33-18-6	Shut down 2,550 ft.
CLAY COUNTY	
Chrisler et al's No. 1 Tivier, SW cor. Sec. 19-8-3	Shut down 50 ft.
CHAUTAUQUA COUNTY	
Valentine Oil Co.'s No. 1 Purcell, NW SE SW Sec. 2-33-9	Spudding.
COWLEY COUNTY	
Prairie O. & G. Co.'s No. 1 Dosbaugh, SE cor. Lot 27, Sec. 18-32-8	Rig.
Edenfield & Fair's No. 1 Wallace, CWL NE Sec. 17-34-4	Shut down 365-75 ft.; 2,000,000 ft. gas.
Fine et al's No. 1 Brown, SE cor. Sec. 8-32-4	Drlg. 2,120 ft.
Milton & Mead's No. 1 Tatum, SE cor. SW Sec. 11-31-6	Shut down 1,920 ft.
DICKINSON COUNTY	
Cress' No. 1 Sanden, NE cor. Sec. 12-15-2	Rig.
Prairie's No. 1 Lachard, C NW SW NE Sec. 12-16-2	Drlg. 2,080 ft.
Hiatt & Durham's No. 1 Wendt, NW cor. Sec. 17-16-2	Spudding.
Kruger et al's No. 1 Diche, C NW NE NE Sec. 17-13-4	Shut down 2,390-2,400 ft.; water.
E. N. Morgan's No. 1 Whithair, NW SE Sec. 9-12-1	Shut down 150 ft.
DOUGLAS COUNTY	
Steinbuckel's No. 1 Unknown, SW NE NW Sec. 34-14-21	Rig.
Jenkins & Scott's No. 1 Haden, SE NW Sec. 10-12-17	Shut down 550 ft.
EDWARDS COUNTY	
Skelly's No. 1 Johnson, NE SW Sec. 21-26-17w	Shut down 3,585 ft.
Barnsdall Oil's No. 1 McCarty, NW NE Sec. 31-25-17w	Drlg. 3,320 ft.
Dixie & Amerada's No. 1 McCarty, SW cor. Sec. 22-26-17w	Drlg. 3,610 ft.

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Bee County Well at 600 Barrels Rate

Mile South of Pettus Discovery Gas Well. Northwestern Brooks County Test Getting Oil Instead of Gas

By B. D. Stevenson
Staff Correspondent, Southwest Texas Fields

SAN ANTONIO, Tex., Feb. 3.—Houston Oil Co.'s No. 1 McKinney in Bee County, 1 mile southeast of Pettus and a mile south of the Pettus discovery gas well, late Saturday was flowing at the rate of 600 bbls. of 45 gravity oil per day through a five-sixteenths-inch choke. Total depth is 3,070 feet. It is about 200 feet deeper, not allowing for elevation, than the discovery gas well of the Mission Drilling Co. The size of the well and the other discoveries that have been made in that part of Bee County spreading over a territory 10 miles long and 6 miles wide is such that attention will be centered there for some time.

The block of leases was originally taken by the Humble Oil & Refining Co. which turned the gas lease to the Houston Oil Co. which drilled the well. Now that it is an oil well it is understood it will become the property of the Humble Oil & Refining Co.

Development of the Darst Creek area has settled already to more or less a matter of routine. Those holding leases and royalties are interested in seeing how the field is finally going to develop with reference to their holdings and the student of oil fields is watching to see how it runs just for the sake of information but there is nothing in the field for sale.

Attention therefore turns to the newer development in northern Bee and northwestern Brooks County and the play along the geological lines of these two spots is likely to be quite spirited during at least the early part of 1930. The Pettus area is in the lead with its new oil producer of high gravity oil. In Brooks County the Houston Oil Co. is expecting to drill the plug in its No. 1 Wormser-Holbien early this week. The block of leases here was first taken by the Shell Petroleum Corp. and the gas lease turned to the Houston Oil Co. and it looks very much as though history would repeat itself here also for the Houston Oil Co. and that instead of getting gas it would get oil and have to turn the deal over to the original lease purchaser. Total depth of this hole is 4,150 feet and it set 8¼-inch casing at 4,140 feet. It is 650 feet south of No. 1 Lasater which the company brought in as the discovery gas well of the county and the only production for 40 miles around. On drill stem test No. 1 Wormser-Holbien showed every evidence that it would make an oil well. It cleaned itself flowing gas and spraying oil. The valve was open only a few minutes and when the drill stem was taken out it measured out 700 feet of oil.

Laredo District

In the Laredo district the feature of the week is the Magnolia Petroleum Co.'s No. 1 Brennan Benavides, which tested oil on a drill stem test a couple of weeks ago and is now completed and flowing at the rate of about 300 bbls. of oil a day through tubing. The first completion report was 95 bbls. in 12 hours, heading every two hours. Since then tubing has been run and the test is flowing a steady stream of 30.8 gravity oil. This well is in the O'Hern-Seacord Pool at the south end of the Cole gas field and the test is producing at 2,777 feet with only one other well at that depth and it is the O'Hern-Seacord gas well producing at 2,733 feet.

Other producers completed in the Laredo district have not added much of interest except R. F. Blankenship's No. 1 Montemayor in Zapata County between the Jennings gas field on the west and the Randado oil pool on the east. They have been trying for some time to make a producer out of it. Finally they shot it and reports are that it is an oil well but this information is not confirmed yet. Last authentic reports were 3,000,000 feet of gas at 1,318 feet.

The next important piece of news from the Laredo country is likely to concern the Magnolia Petroleum Co.'s No. 4 Brennan Benavides, a couple of miles west and a little north of the same company's No. 1 Brennan Benavides. No. 4 is at 3,080 feet and is up the dip from No. 1, hence at 3,070 feet, it is in a deeper sand than No. 1. On a drill stem test it showed considerable gas and oil and has been ordered to set casing. It topped the sand at 3,070 feet, at which depth casing was set.

Humble Oil & Refining Co.'s No. 40 Kohler, in Duval County, is a 50-bbl. oil well and C. E. Long's No. 4 Hahl, in the Schoolfield-O'Byrne Pool in Duval County, is a 40-bbl. oil well at the regulation depths for the fields.

Starr County

Some interest is going to center around The Texas Company's No. 1-B V. C. de Guerra, in Starr County, north of Roma and near the same company's No. 4-A which came in recently an oil well of 35 gravity oil 50 miles from any production. No. 1-B is the first test for the company since the bringing in of the discovery well. It is now rigging up and is in Share 92 of Porcion 68, and is 150 feet to the south and west lines of the north 1,173 acres out of that share and porcion, in the jurisdiction of Mier.

Production

Daily average production of the pools of Southwest Texas for last week follows:

	Bbls.
Branyon	16
Buchanan	29
Bruner	26,817
Dale	338
Darst Creek	16,079
Kingsville	182
Larremore	79
Luling	9,089
Lytton Springs	815
Manford	540
McMullen County	45
Medina County	24
Mirando	8,984
Somerset	1,731
Yoast	790
Total	65,649
Week ending January 25	64,229
Increase	1,420

Coast Counties

Some interesting developments showed up in the coast counties. Due to titles and also to the fact that some operators held gas leases on their land but not oil leases deep drilling has been delayed in the White Point territory. Also there was some litigation. This is all straightened out and some deep drilling can be expected. Some has already started. Saxet Gas Co. is in a sand at 3,380-85 feet on the south side of Nueces Bay in the White Point country and has a showing of oil. This is considerably deeper than production in the gas wells surrounding it. The test is the company's No. 5 Dunn which was a gas well at around 2,000 feet. The same company is getting ready to drill deep in the White Point Field on the north side of the bay.

Houston Oil Co.'s No. 2 Dunning, in Live Oak in the Lucas gas field, has a showing of oil and will test at 4,310 feet. It also is about twice as deep as the gas production in that field and is an effort to pick up deeper production.

Darst Creek Field

In the southwest end of the Darst Creek Field the completions, thus far have not been as large as some at other points in the field. There were seven completions during the week and the combined initial production was rated at 4,850 bbls. daily, an average of 693 bbls. per well. Empire Gas & Fuel Co.'s No. 3 Dowdy, in the southwest end, was estimated at 400 bbls. daily, and No. 2 Dowdy, 490 bbls. daily. Top of the Austin in No. 3 is at 2,215 feet, and total depth 2,633 feet, and No. 2 topped the chalk at 2,208 feet and total depth is 2,632 feet. Each produces from the Edwards. Humble Oil & Refining Co.'s No. 1 Dowdy topped the chalk at 2,202 feet but has not yet reached the Edwards. It offsets the Empire's No. 2 Dowdy. The Texas Company's No. 1 Dowdy, a west offset to the Empire's No. 3 Dowdy, topped the chalk at 2,980 feet but is not yet into the Edwards lime.

In the northeast end of the field around the Magnolia Petroleum Co.'s No. 1 Appling where activity was described in The Oil and Gas Journal last week and where operators are trying to find the line of the Edwards lime production no completions have been made and it will be another week before this part of the field clears up.

COMPLETIONS

Darst Creek—Guadalupe County

Humble Oil & Refining Co.'s No. 3-A Denman, 600 feet from 2-A, 150 feet W of division line of Knoblock and Posey tracts, total depth 2,583 feet, top chalk 2,180 feet, bottom chalk 2,330 feet, top Edwards 2,550 feet, 60 bbls. per hour, flowed 66 bbls. per hour the first 2 hours.

Magnolia Petroleum Co.'s No. 1 J. M. Richburg in the J. R. Robinson Survey, 150 feet from S and E lines, total depth 2,625 feet, no chalk, Eagleford 2,401 feet, Buda 2,419 feet, set casing at 2,385 feet, top Edwards 2,615 feet, 350 bbls.

Gulf Production Co.'s No. 1 Dix-McKean, 350 feet EW line, 150 feet SN line, 240-acre tract in the Joel R. Robinson Survey, total depth 2,570 feet, top chalk 2,158 feet, top Edwards 2,556 feet, flowed 30 bbls. per hour.

Empire Gas & Fuel Co.'s No. 2 Dowdy, 650 feet SN line, 150 feet SW line of Dowdy 40-acre E offset to Humble's No. 1 Dowdy, top chalk 2,200 feet, top Edwards 2,595 feet, total depth 2,633 feet, swabbed 525 bbls.

Humble Oil & Refining Co.'s No. 5-A Denman, 150 feet S line, 750 feet from a point beginning at W line of Henry Willie 113-acre in the A. S. Emmett Survey, top chalk 2,195 feet, top Edwards 2,570 feet, total depth 2,606 feet, 1,100 bbls. initial.

Magnolia Petroleum Co.'s No. 5 Dix, 400 feet from NE line, 750 feet from SE line of lease and farm in the J. R. Robinson Survey, top chalk 2,170 feet, top Edwards 2,552 feet, total depth 2,603 feet, 1,200 bbls.

Trinity Drillers' No. 1-C Miller, 150 feet each way out of NW cor. of 23.5-acre tract in the G. B. Alexander Sur-

(Continued on Page 116)

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

ATASCOSA COUNTY

Alexander Boynton's No. 1 fee, in the John Sharp Sur., 3,645 varas E W line, 2,070 varas S N line of Sur., SW end of Somerset Field ..... T. D. 2,512 ft. in sand; will try to complete as gas well.

BASTROP COUNTY

B. L. Batts et al's No. 1 A. A. Alexander, W. M. Eastland Sur., 4,190 ft. to NW line, 1,320 ft. to SW line of Sur. ..... Shut down 1,325 ft.

Jim Harper's No. 1 Mitchell, 150 ft. from SE cor. Blk. 111, Bastrop Townsite ..... Derrick.

Johnson Bros.' No. 1 J. A. Cox, 980 ft. from NE line, 150 ft. from SE line of tract in Jas. Blalock Sur..... T. D. 2,000 ft.; shut down in chalk.

Abernathy et al's No. 1 A. Aldridge, in the Martha Barker Sur., 2,750 ft. SE and 450 ft. NE of 241-ac. tract or 2,000 ft. SW and 4,500 ft. NW of Sur. ..... T. D. 2,000 ft. shale; shut down.

Superior Oil Co.'s No. 1 A. Lasher, D. Dykes Sur., 600 ft. to S and W lines of Sur. ..... Location (corrected).

BEE COUNTY

Houston Oil Co.'s No. 1 McKinney, L. C. Randolph Sur. ..... T. D. 3,070 ft.; bailing in.

Dr. Bozo & Cooper's No. 1 A. J. Kimball, C 189 acres in the Stephen Winship Sur. ..... Spudded in.

The Texas Company's No. 3 Tipps ..... T. D. 1,000 ft.; standing.

Union Producing Co.'s No. 5 George Ray, NE offset to No. 1 J. J. McKinney ..... Rigging up.

BEXAR COUNTY

Burton Oil Co.'s No. 1 P. H. Shook, in Monjares Sur., 3,150 ft. to E line, 150 ft. to N line of farm, 10 miles SE from San Antonio ..... Derrick.

Dingman Drlg. Co.'s No. 1 W. Kelso, 1,400 ft. from E line, 822 feet from S line of tract, near Alta Vista Field in the J. M. Urriegas Sur. ..... Location.

F. H. Eckert's No. 1 Sandemer, Sur. 52 ..... Drlg. 615 ft.

Moore-Jauer's No. 1 Holly R. Ellison ..... T. D. 1,960 ft.; drlg. in gumbo.

BLANCO COUNTY

Ashe & Marshall's No. 1, 5 miles S Johnson City ..... Shut down 85 ft.

BROOKS COUNTY

Amos Dinn, trustee's No. 3 Garcia-Ramosi, Share B-1, Las Mestenas y Gonzales grant, 1,300 ft. S line, 2,325 ft. W line of Share B-1 ..... T. D. 1,655 ft.; standing.

Humble Oil & Ref. Co. and Shell Pet. Corp.'s No. 1 Singer, Alta Verde Subd., 2,500 ft. S of N line, 333 ft. W of E line of Sec. 312 ..... T. D. 1,365 ft.; drlg. in gumbo.

CALDWELL COUNTY

J. Harper et al's No. 1 Crenshaw, in the J. Burleson Sur., 600 ft. NE and 320 ft. NW of farm ..... T. D. 1,943 ft.; Serpentine; reaming.

W. E. Allaun and Calco Pet. Co.'s No. 1 Martin ..... T. D. 2,920 ft.; preparing to shoot.

Keen & Malcolm's No. 1 Mollie McNeal, George C. Kimball Sur., 2,500 ft. to W line, 860 ft. to N line, 1 mile S from old Luling Field ..... T. D. 890 ft.; shut down.

San Antonio Petroleum Corp.'s No. 1 Gustave Walkerhagen, Thomas Maxwell Sur., 150 ft. to NW and SW lines, 11 miles W from Lockhart ..... T. D. 1,400 ft.; drlg. in Edwards.

G. R. McIntire's No. 1 J. G. Towns in the I. Weldon Sur., 4,900 ft. to NE line, 1,350 ft. to SE line of Sur. ..... T. D. 2,630 ft. in chalk; shut down.

W. H. Harper's No. 3 Thomas, J. Roberts Sur. ..... Fishing for pipe.

DEWITT COUNTY

Gibson & McIntyre's No. 1 William Van Roeder ..... T. D. 1,480 ft.; shut down.

(Continued on Page 95)

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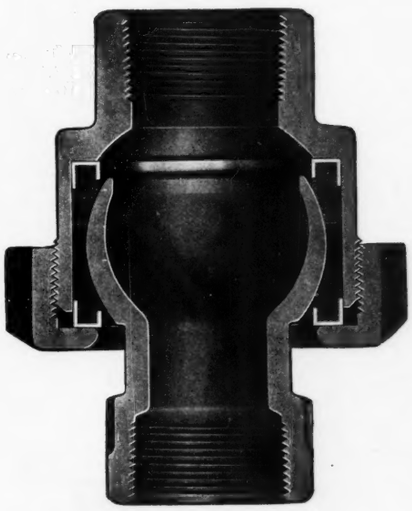

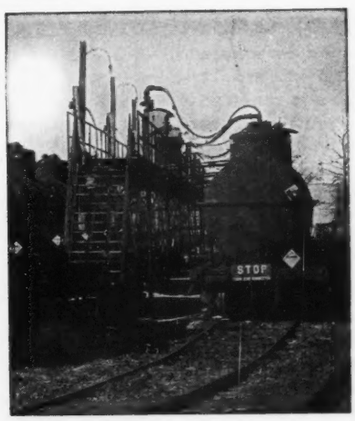

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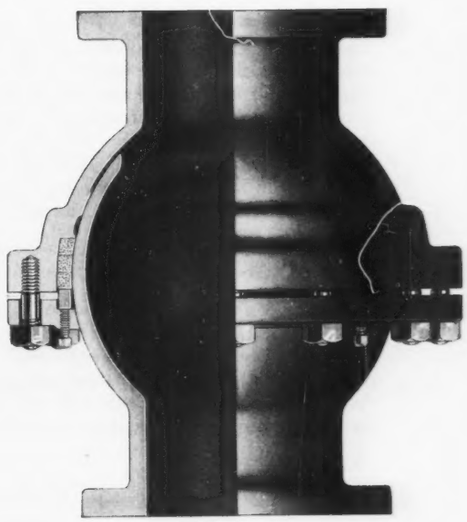

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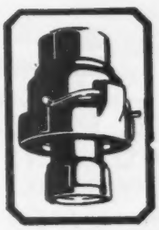

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Oil 2-6 Gray

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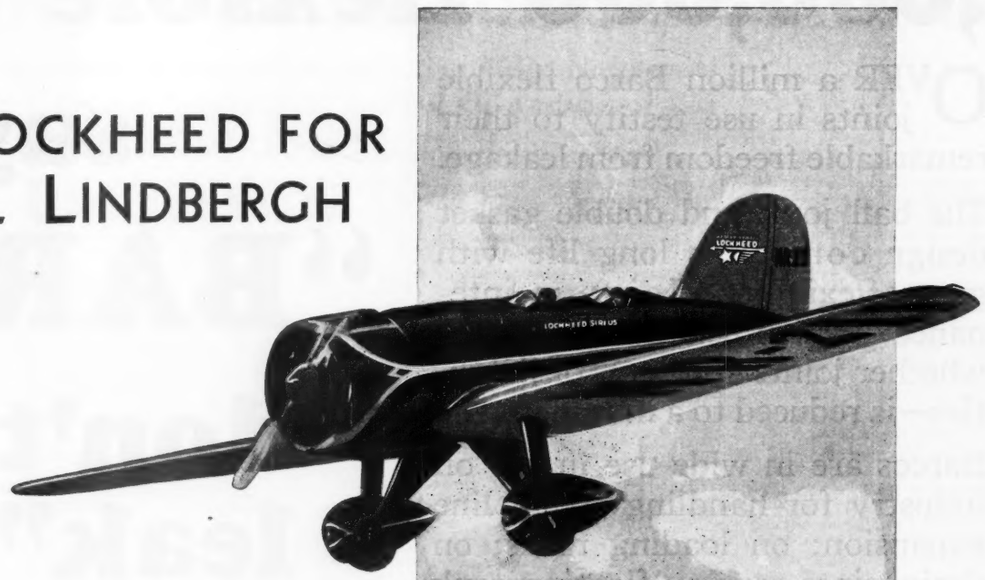

Last summer Colonel Lindbergh laid before Lockheed engineers specifications for the type of airplane which would meet his ideas and requirements. It should incorporate the latest development in aircraft engineering and design. It should be powered with a proven type of engine and, therefore, obtain efficiency through aerodynamic design rather than additional power. It should have a maximum top speed, together with large carrying capacity, and a landing speed which would permit the use of undeveloped airports far from organized airways.

Colonel Lindbergh recommended a low-winged monoplane with two open cockpits—and the Wasp-powered Sirius is Lockheed's answer.

According to the agreement between Colonel Lindbergh and the Lockheed Corporation, the plane was not to be paid for until its performance was satisfactory. In California last month Colonel Lindbergh took delivery of the first Lockheed Sirius and expressed his approval of the design. As a result of the performance tests of Colonel Lindbergh's plane, the Sirius has been made a standard model in the famous Lockheed line.

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Sale of Zwolle Gusher is Confirmed

Benedum-Trees Gets It and 10,000-Acre Block from W. E. Cook for $3,000,000. Sugar Creek Area Produces Its Best Gasser

By D. H. Bancroft
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., Feb. 3.—Weeks of contradictory reports regarding the sale of W. E. Cook's 10,000-acre block and the Zowlle gusher to the Benedum-Trees Oil Co. ended when division orders went out effective January 30 crediting runs from the big well, which, over two months old, is still flowing more than 3,000 bbls. daily—3,569 bbls. through regulator on the last 24-hour gauge—to Benedum-Trees. Consideration was $3,000,000—$1,000,000 cash and the remainder out of the first one-quarter oil plus a one-twenty-fourth overriding royalty on all production.

It turns out that one of the details that kept the deal hanging fire was a 22-well drilling clause Mr. Cook had in his understanding with the Bowman-Hicks Lumber Co. Benedum-Trees do not like to commit themselves to any sort of drilling clause and once this obstacle was removed the trade went through.

There is a rumor that Mr. Cook, having realized more than two for one on all he has spent in Sabine during the last eight or ten years may pull out entirely and that R. L. Gay, his local agent, will take over the 30,000 acres centering around the four Blue Lake producers and develop them. Gay is ill and could not be reached for confirmation of the report.

Interesting as this bit of news was, it was overshadowed when Triangle Drilling Co.'s No. 1 Kilpatrick, Section 7-19-5, Claiborne Parish, between 12 and 15 miles southeast of Homer production, tried to blow the drill stem out of the hole with an estimated 5,000,000 feet of gas from a total depth of 4,371 feet January 31. It is the best show this Sugar Creek area has developed in all the time Triangle and others have been prospecting it—a matter of several years. Nine-inch casing was set at 4,266 feet as a matter of fulfilling dry hole money contract and hole was being made when the bit ran suddenly out of anhydrite and the core barrel was run at 4,355 feet.

Sixteen feet of core was taken and then the gas started. The drill stem was raised a few feet off bottom and swung from the top of the 9-inch with a makeshift rope bradenhead until enough mud could be pumped in to hold down the gas and permit surface fittings to be placed. That done, the well will be bailed and perhaps, completed.

Was to Have Been 7,000-Foot Test

Location of the test is about half a mile north of another well the Triangle drilled some time ago to 4,662 feet and bailed oil that closely resembled Homer crude. This present well was to have been a 7-000-foot test "unless." And it appears that the "unless" is about to be realized. It is remindful of Magnolia Petroleum Co.'s 7,000-foot No. 1 McCook and Hibbler in Section 22-21-10, Cotton Valley district, of Webster Parish, and is supposed, at this writing, to be making its gas from the so-called Davis sand found in Cotton Valley at around 4,550 feet. However, there isn't sufficient dope on it at this time to hazard a guess of any sort as to what the gas is coming from. Some time ago Triangle drilled No. 1 Chandler a half-mile south in the same section and bailed oil from a total depth of 4,662 feet but failed to make a commercial well. Maybe, on the strength of this and the new gas show, there will be another deep hole drilled in Sugar Creek.

Chief interest in Sabine Parish developments centered around Ohio Oil Co.'s No. 1 Bowman-Hicks, Section 35-8-12, a little over a half-mile east of the Zwolle gusher. Drilled to 2,405 feet, it made two small heads totaling 80 bbls. and was left alone while standard rig was being built. The next day it made one head of 60 bbls. It is not what was expected of it but may yet turn out to be a good producer.

Ohio's No. 2 Bowman-Hicks in Section 33-8-12, 1 mile west of the big gusher, was dry at 2,384 feet and is "feeling" the way down, knowing it is 60 feet lower on the top of the chalk than the discovery well. Ohio's No. 1 Bowman-Hicks was 3 feet low on the chalk measured by Gay's discovery well. Last information on No. 2 is that it is setting liner to test a small show of oil at 2,462 feet.

Production pipe line runs, fell off slightly during the week, the total daily average of 93,745 bbls. being 245 less than last week. Louisiana runs of 36,495 bbls. were 640 under last weeks while Arkansas' 57,250 bbls. was an increase of 395 bbls. There was a gain of 655 bbls. in runs of Smackover heavy oil which averaged 39,545 bbls., and 130 bbls. from the Zwolle district of Sabine Parish which averaged 4,045 bbls., but a drop of 310 bbls. in runs from Champagnolle cut heavily into these gains. Daily average runs from the several pools in the division were:

NORTH LOUISIANA

Caddo, light	8,886
Caddo, heavy	2,625
Homer	3,600
Haynesville	4,625
DeSoto-Red River	2,345
Elm Grove	435
Bellevue	630
Cotton Valley	2,225
Urania	5,140
Pleasant Hill	920
Sarepta	1,020
Zwolle	4,045
Total	36,495

ARKANSAS

El Dorado	4,190
Smackover, light	5,250
Smackover, heavy	39,545
Stephens	1,010
Nevada County	1,120
Lisbon	1,055
Champagnolle	4,850
Bradley	30
Mount Holly	150
Total	57,250
Both states	93,745
Last week	93,990
Decrease	245

Standing 90 Feet in Oil

Olsan Brothers' No. 1 Keelan, Section 27-8-12, is standing 90 feet in oil, total depth 2,625 feet and waiting on standard rig. Oil has been rising slowly in the hole since it made a not altogether satisfactory test at this depth a week or ten days ago and later on was shot at intervals from 2,500 feet on.

R. L. Gay's No. 6 Bowman-Hicks in Section 14-7-14, Blue Lake end of Zwolle, topped the chalk at 2,102 feet, plenty high, and cemented 6⅝-inch at 2,090 feet. No. 3 Sabine Lumber Co., Section 13-7-14, is bailing to test at 2,250 feet. It is the most northerly of the group of his Blue Lake wells. With two wells already under way the Ruston Drilling Co. has derrick up for a third, No. 1-A Bowman-Hicks, Section 35-8-12, a quarter mile south of Ohio's No. 1.

In the Pleasant Hill district of Sabine, Magnolia Petroleum Co. has rig up for No. 2 McLeroy in Section 33-10-12. Bridges-Clark Oil Co. cemented 6⅝-inch on No. 1 Guy, Section 33-10-12, Pleasant Hill district, which recently blew out with an estimated 25,000,000 feet of gas at 2,367 feet, total depth 2,486 feet, and made location for No. 1 McWilliams in Section 30-10-11, about 5 miles northeast. "Northeast" seems

(Continued on Page 120)

LOUISIANA-ARKANSAS PROVEN AREAS

NORTH LOUISIANA

BOSSIER PARISH—BELLEVUE

Company, farm and location—	Remarks—
H. L. Morgan's No. 2 Wetherbee, 3,811 ft. E. 200 ft. S. NW cor., Sec. 28-19-11	Coring shale 2,900 ft.

BOSSIER PARISH—CARTERVILLE

Bahan & Bahan's No. 1 G. W. May, 660 ft. S, 660 ft. W, NE cor., Sec. 26-23-12	Rig up.
Bahan & Bahan's No. 1 Floyd Pleasant, 150 ft. N, 150 ft. W. C. Sec. 25-23-12	Derrick.
Del.-La. Dev. Co.'s No. 2 Bollinger, 200 ft. N, 200 ft. W, SE cor. NE NE, Sec. 31-23-11	Milling out liner; T.D. 3,129 ft.
Greenwood Prod. Co.'s No. 1 Bollinger, 1,980 ft. N, 1,150 ft. E, SW cor. SE, Sec. 36-23-12	O.W.D.D. 3,071 ft.
Goodman-Johnson's No. 1 Martin, 330 ft. S, 330 ft. E. NW cor. SE, Sec. 26-23-12	Arranging to set 4½-in. and packer 3,150 ft; T.D. 3,169 ft.
La. Pet. Corp.'s No. 2 J. W. Peyton, 1,170 ft. S, 150 ft. W, NE cor. SE, Sec. 25-23-12	Cmtd. 10-in. 307 ft; drlg. 600 ft.
La. Pet. Corp.'s No. 3 Peyton, 660 ft. S, 150 ft. W, NE cor. SE, Sec. 25-23-12	Drlg. 2,400 ft.
Lide et als' No. 1 Farrington, 330 ft. N, 330 ft. W, SE cor. NW NW, Sec. 23-23-12	Derrick.
La. Oil Ref. Corp.'s No. 1 Matlock, 2,970 ft. S, 990 ft. E, NW cor., Sec. 26-23-12	Rig up.
Love et als' No. 1 Allen, SE cor. NE NE, Sec. 30-23-11	Derrick.
Magnolia Pet. Co.'s No. 1 M. A. Rogers, 660 ft. S, 660 ft. W, NE cor. NE SE, Sec. 21-23-12	Had 100 ft. oil and little S.W.; swbd. 7 bbls. oil; drlg. 3,264 ft.
Muslow Oil Co.'s No. 1 Barnett, 1,320 ft. W, 660 ft. N, SE cor., Sec. 25-23-12	Cmtd. 6-in. 3,140 ft; 3-ft. sand 3,143 ft.
Muslow Oil Co.'s No. 1-B Kilgore, 3,050 ft. N, 1,930 ft. E, SW cor., Sec. 31-23-11	Drlg. 3,070 ft.
Muslow Oil Co.'s No. 1-C Kilgore, 2,080 ft. N, 1,980 ft. E, SW cor., Sec. 31-23-11	Running sand pump; T.D. 3,167 ft.
Muslow Oil Co.'s No. 1 Mark Myer, 1,980 ft. N, 330 ft. W, SE cor., Sec. 36-23-12	Arranging to deepen; T.D. 3,088 ft.
Northwest La. Gas Co.'s No. 5 Bollinger, 252 ft. E, 200 ft. S, NW cor. Lot 7, Sec. 31, in Sec. 38-23-11	Rigging up.
Nat. Gas Prod. Co.'s No. 1 U. S. Gov., 660 ft. N, 660 ft. W, C, Sec. 31-23-11	W.O.S.R. 3,194 ft.
Nat. Gas Products Co.'s No. 2 U. S. Govt., NW cor. SE NW, Sec. 31-23-11	Rigging up.
Palmer Corp.'s No. 4 Roberson, 660 ft. E, 660 ft. S, NW cor. NW NE, Sec. 26-23-12	Cmtd. 4½-in. 3,155 ft; T.D. 3,175 ft.
Phillips Pet. Co.'s No. 1-A Bollinger, (formerly Sales & Walker's No. 4 Bollinger) 696 ft. S, 1,120 ft. E, NW cor. SW, Sec. 30-23-11	Drlg. 2,050 ft.

Continued on Page 96)

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

NORTH LOUISIANA

BOSSIER PARISH

Company, farm and location—	Remarks—
Simon Goldman's No. 1 McFarlin, SE cor. SW, Sec. 7-19-13	Coring 2,449 ft.
Nell & Lanier's No. 1 Biedenharn, SE cor., Sec. 23-21-14	W.O.S.R; 980 ft. oil in hole; T.D. 998 ft; arranging to re-test at 998 ft.
S. P. Lanier's No. 1 Le Rosen, 300 ft. S, 1,600 ft. W, NE cor., Sec. 26-21-14	Derrick.
Walker et als' No. 1 Antrim, NW cor. SE, Sec. 28-22-13	Set liner; washing; T.D. 3,184 ft.
C. L. West et als' No. 1 Sentell & Dickson, 2,310 ft. W, 895 ft. N, SE cor., Sec. 3-20-13	S.D. 1,110 ft.

CADDO PARISH

R. W. Norton's No. 1 Hill, 630 ft. N, 1,260 ft. W, SE cor. NE, Sec. 33-23-16	D.S. test 8-ft. sand 4,479 ft; S.W; S.D. 4,496 ft.
I. N. Pharis, trustee's No. 1 Oden, NE cor. SE NE, Sec. 16-19-14	S.D. 2,322 ft; topped sand at 2,396 ft; set 6⅝-in; T.D. 2,409 ft.
Old River Oil Co.'s No. 1 Sibley, 300 ft. E, 300 ft. S, NW cor. SE, Sec. 15-19-14	W.O.S.R. 2,495 ft.
The Texas Co.'s No. 1 Henderson L. & T. Co., 990 ft. N, 450 ft. E, SW cor., Sec. 16-19-15	Drlg. 1,957 ft.

CATAHOULA PARISH

Lochnager Pet. Co.'s No. 1 Taliaferro, 572 ft. E, 396 ft. S, C, Sec. 26-9-6	S.D. 900 ft.

CLAIBORNE PARISH

El Dorado Chief Oil Co.'s No. 1 Dance, C SW NE, Sec. 27-20-7	S.D. 2,240 ft.
Leue Oil Co.'s No. 1 Taylor, Sec. 16-22-6	Derrick.
Triangle Drlg. Co.'s No. 1 Kilpatrick, 660 ft. S., 660 ft. E, NW cor. SW NE, Sec. 7-19-5	Bailed csg. down 3,000 ft; drlg. anhydrite 4,280 ft.

CONCORDIA PARISH

Joe Man et als' No. 1 Maxwell, C, Sec. 35-3n-8e	Began drlg. Jan. 15; 12½-in. at 130 f.; W.O.

DE SOTO PARISH

Benedum & Trees Oil Co.'s No. 1 Johnson, 300 ft. S, 300 ft. W, NE cor., Sec. 7-11-13	Drlg. 1,856 ft.
Benson Oil Co.'s No. 1 Harris, Sec. 6-10-13	Drlg. lime 3,450 ft.
Magnolia Pet. Co.'s No. 1 Anna Mason, 990 ft. S, 990 ft. E, NW cor. SW, Sec. 27-12-11	Drlg. 3,283 ft.
R. O. Roy's No. 1-B Farmer, 660 ft. S, 660 ft. E, NE SW, Sec. 18-13-13	Derrick.
R. O. Roy's No. 1-E Farmer, 660 ft. S, 660 ft. W, NE cor. NW, Sec. 5-13-13	Drlg. 1,930 ft.

FRANKLIN PARISH

Davis et als' No. 1 Moore, 600 ft. W, 200 ft. S, NE cor., Sec. 12-11-6	S.D. 1,430 ft.

(Continued on Page 101)

Refugio Field Showing Great Activity

New Pipe Line to Gulf Nearing Completion. Many New Locations. Sun's Well in Humble Pool Increasing Output

By Neil Williams
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., Feb. 3.—With 25 new locations made within the past 10 days, 33 rigs actively drilling on February 1 and with a dozen other tests rigging up, no sign of abatement in the development of the Refugio Field is evident and indications point to the building up of a daily production of 40,000 bbls. there before many weeks. Daily average production of this field for the week ending February 1 was 26,630 bbls. from 78 wells and with over a half dozen other wells testing or preparing to test at the close of the week, the output is expected to continue to increase steadily.

Barring unexpected delays, the new 8 and 10-inch pipe line being laid by the Gulf Coast Pipe Line Co. (William F. Morgan interests) from the field to the company's terminal at Aransas Pass should be completed within 10 days. This line, which augments a 6-inch line already in operation by that company, will boost the pipe line outlet capacity to 40,000 bbls. daily according to Mr. Morgan and provide adequate outlet relief for the time being.

The active and increasing development of Refugio, whose producing area already is the largest of any coastal field, and as yet undefined, is in the face of a 55-cent crude posting, which is far below the cost of drilling. However, this low price is beginning to prove quite attractive to crude buyers, not only tank car lot marketers but also larger companies who now are paying substantial premiums and a number of new contracts for substantial quantities of oil are being made at higher prices.

Large Potential Producer

Refugio, which until comparatively recently was not looked upon with favor generally, now is recognized as one of the largest potential producing areas on the Gulf Coast and is one of the few fields on the coast held almost entirely by independent companies. Although the field is over a year and a half old as an oil producer and only approximately 30 miles inland from port facilities at Corpus Christi or Port Aransas, only one pipe line ever has been laid to the field, that being the 6-inch line of the Gulf Coast Pipe Line Co. This line has been crowded to capacity and with general lack of storage facilities production has been held down to a minimum, which, although drilling development has been going on steadily, has been responsible for the field being inconspicuous among southern Texas major field possibilities until now.

The proving of the deep production on the east and southeast side of the present 3,700-foot field, is among the most important new developments on the Gulf Coast. Four wells have been completed in the new 5,400-5,500-foot sand, the latest being Saxet Oil Co.'s No. 1 Ryals, completed early in the week flowing initially at the rate of 775 bbls. of pipe line oil at 5,455-72 feet. Although there is only a production of between 1,500 and 2,000 bbls. daily in this deep, light oil, the high gas pressure has necessitated pinching in the wells to the absolute minimum. The wells, however, extend over a distance of more than a mile apart with the territory between and beyond as yet undrilled. This light oil (36.9 gravity) is being moved out of the field by tank car going mainly to the refinery of the Motor Fuel Products Co. (United Gas Co. subsidiary) at Laredo, which refinery has shifted over from Mirando to Refugio crude entirely. Tank car movements to Laredo were facilitated by the recent reduction in rates from 16 to 8 cents obtained by the United Gas Co.

In the 3,700-foot field, Rutherford-Traylor Oil Co. got a good producer in its No. 1 Townsite, Block 92, which is flowing initially 860 bbls. of pipe line oil from the sand at 3,677-95 feet. The only other Refugio completion was Houston Oil Co.'s No. 11 Pratt-Hewitt-Rooke on the north end which made an estimated 50,000,000 feet of dry gas at 3,667-80 feet.

Humble Pool Producer

Sun Oil Co.'s No. 3 Bender, wildcat producer on the west side of the Humble Field, completed early in the week flowing an estimated 1,500 to 1,800 bbls. of pipe line oil daily, has been increasing its flow steadily all week and at this writing is making better than 2,200 bbls. daily. The well, which is in the Humble Townsite and some distance from the old shallow field on top the dome and about 2½ miles around the dome from the deep field on the south side, is in a sand at 3,859-3,903 feet. Forty-six feet of 4½-inch screen was set and the well is flowing on two chokes, a half-inch and a 3-inch through liner to the top. The oil is 31.5 gravity at a temperature of 62 degrees, which is somewhat lower than the 41-42 gravity oil on the south side of the dome. The sand also is shallower than that on the south side.

The completion of this well has been followed by the making of location by the Rio Bravo Oil Co. on its fee property in the Bender south addition, the location being No. 1 fee, 200 feet from the north line and 50 feet from the west line of Block 4, a 22-acre tract, W. B. Adams Survey. This test is considerably south and some west of the Sun well.

The forepart of the week also was marked by the completion of two other deep wells at Humble, both on the south side. These were Humble Oil & Refining Co.'s No. 10 Williams, flowing 870 bbls. at 5,316 feet, and its west offset, South Texas Petroleum Co.'s No. 2 Lee, flowing 1,964 bbls. the first 24 hours at 4,941 feet. Humble also worked over its No. 2 Williams, which flowed 500 bbls. of oil from a shale at 3,910 feet.

GULF COAST FIELDS AND WILDCATS

Week Ended February 1

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Production Co.'s No. 3 Barber, north side.—Drlg. sandy lime 5,279 ft.
Mills Pennett Production Co.'s No. 2 Means (east)—Drlg. sand and shale showing oil 5,083 ft.
Mills Bennett Production Co.'s No. 3 J. F. Wilburn, southeast—Derrick.
Gulf Production Co.'s No. 2-A Wilburn, southeast—Location.
Humphreys Corp.'s No. 5-A Barber, northwest—Location.
Humphreys Corp.'s No. 2-C Kirby—Drill stem stuck 4,674 ft.
Humphreys Corp.'s No. 1 McLean, east side—Coring sand 5,285 ft., showing oil.
Humphreys Corp.'s No. 2 Ilfrey, east side—Drlg. shale 3,046 ft.
Humphreys Corp.'s No. 1 Morgan—Drlg. hard, sandy lime 1,955 ft.
McAlbert Oil Co.'s No. 1 Higgins—Location.
McAlbert Oil Co.'s No. 4 Woodward southeast—Set screen to test 5,113 ft.
Republic Production Co.'s No. 3 Kirby (southeast)—Rigging to pump 5,335 ft.
Sinclair Oil & Gas Co.'s No. 3 Wilburn, southeast—Drlg. shale and lime 4,361 ft.
Sinclair Oil & Gas Co.'s No. 4 Wilburn, southeast—Comp. flowing 180 bbls. oil 5,225 ft.
Sinclair Oil & Gas Co.'s No. 5 Wilburn, southeast—Location.
Sun Oil Co.'s No. 3 Wilburn, southeast—Rigging up to pump 5,331 ft.
Sun Oil Co.'s No. 4 Wilburn (southeast)—Drlg. shale and lime 4,423 ft.
Sun Oil Co.'s No. 2 J. Wilburn (southeast)—Drlg. shale and lime 3,851 ft.
Sun Oil Co.'s No. 3 J. Wilburn, southeast—Rig.
Sun Oil Co.'s No. 4 J. Wilburn, southeast—Derrick.
Sun Oil Co.'s No. 4 Chambers (south)—Drlg. shale and lime 4,423 ft.
Sun Oil Co.'s No. 3 McKinney, southeast—Comp. flowing 180 bbls. 5,225 ft.
The Texas Company's No. 1 Lawrence—Testing oil sand 5,367 ft.
Unice Oil Co.'s No. 2 Feldman, east—Drlg. gumbo 3,084 ft.
Yount Lee Oil Co.'s No. 10 Chambers (south)—Comp. flowing 500 bbls. oil 5,424 ft.
Yount Lee Oil Co.'s No. 11 Chambers, south—Set 75-ft. screen 5,500 ft.; swabbing.
Yount Lee Oil Co.'s No. 12 Chambers, south—Location.
Yount Lee Oil Co.'s No. 13 Chambers, south—Location.
Yount Lee Oil Co.'s No. 2 Phillips, southeast—Drlg. shale and lime 4,634 ft.
Yount Lee Oil Co.'s No. 1 Zadie Fisher, southeast—Drlg. sand and boulders 2,200 ft.

BOLING—FORT BEND AND WHARTON

Houston Gulf Gas Co.'s No. 1 Fields (northwest)—Drlg. heaving shale 4,101 ft.

RACCOON BEND—AUSTIN COUNTY

Humble & Valley's No. 5 Austin College—Drlg. sandy shale 2,975 ft.
Humble & Valley's No. 6-A Bracey—Derrick.
Humble & Valley's No. 7-A Bracey—Location.
Humble & Valley's No. 3 Buchanan—Derrick.
Humble Oil & Refg. Co.'s No. 8-B Deutrich—Waiting cement to set 1,090 ft.
Humble & Valley's No. 9-A Deutrich—Shut down 3,200 ft.
Humble & Valley's No. 11-B Deutrich—Derrick.
Humble & Valley's No. 12-B Deutrich—Derrick.
Humble & Valley's No. 1 Duncan, State land—Drlg. shale 1,057 ft.
Humble & Valley's No. 6 Gotosky—Shut down 3,177 ft.
Humble & Valley's No. 5-B Grawunder—Rig.
Humble & Valley's No. 10-B Grawunder—Derrick.
Humble & Valley's No. 3 Helmuth—Derrick
Humble & Valley's No. 3 Jackson—Drlg. sandy shale 3,318 ft.
Humble & Valleys No. 1-B Machamehl—Drlg. sandy shale 3,255 ft.
Humble & Valley's No. 2 Mahnke—Drlg. sand 1,011 ft.
Humble & Valley's No. 1-C Mitchell—Location.
Humble & Valley's No. 6 Mueller—Rigging up to pump 3,270 ft.
Humble & Valley's No. 8 Mueller—Drlg. sticky shale 3,394 ft.
Humble & Valley's No. 5 Payne—Comp. flowing 400 bbls. 3,392 ft.
Humble & Valley's No. 6 Payne—Derrick
Humble & Valley's No. 7 Payne—Location.
Humble & Valley's No. 8 Payne—Location.
Humble & Valley's No. 5 Saunders—Derrick.
Humble & Valley's No. 4 Sherrill—Derrick.
Humble & Valley's No. 6 Thompson—Derrick.
Humble & Valley's No. 7 Thompson—Location.
Humble & Valley's No. 6 Urban—Drlg. sandy shale 3,169 ft.
Humble & Valley's No. 7 Urban—Standing 1,165 ft.
Humble & Valley's No. 8 Urban—Drlg. shale and sand 3,160 ft.
Humble & Valley's No. 7-A Walton—Shut down 1,190 ft.
Humble & Valley's No. 8-A Walton—Derrick.
Humble & Valley's No. 3-A Washington—Cem. casing 1,149 ft.
Humble & Valley's No. 4 Woodley—Standing 1,212 ft.
Humble & Valley's No. 5 Woodley—Cem. 9⅝-in. casing 3,120 ft.; total depth 3,144 ft.
Humble & Valley's No. 6 Woodley—Derrick

DE WALT—FORT BEND COUNTY

Humble Oil & Refining Co.'s No. 2-B Bankers Mortgage.—Drlg. hard shale and lime 2,708 ft.
Humble Oil & Refining Co.'s No. 11 Brazos—Drlg. sandy shale 3,529 ft.; showing oil.
Humble Oil & Refg. Co.'s No. 9 Hamner fee—Location.
Humble Oil & Refg. Co.'s No. 13 Sugarland—Rig.
Humble Oil & Refg. Co.'s No. 3 Sugarland—Drlg. gumbo 1,220 ft. after drlg. out 10¾-in. plug.
Humble Oil & Refg. Co.'s No. 8 Nelson—Comp. flowing 75 bbls. 3,802 ft.

HUMBLE—HARRIS COUNTY

John Deering's No. 5 Bissonet—No report.
Humble Oil & Refg. Co.'s No. 8 Williams (south)—Sandy shale 4,285 ft.; cem. 9⅝-in. casing 4,250 ft.
Humble Oil & Refg. Co.'s No. 10 Williams (south)—Comp. flowing 870 bbls. 5,316 ft.
Humble Oil & Refining Co.'s No. 2 Trahon (south)—Set 6⅝-in. casing 4,827 ft.
Rio Bravo Oil Co.'s No. 1 fee, west—Location.
South Texas Petroleum Co.'s No. 14 Morris, south—No report.
South Texas Petroleum Co.'s No. 2 Lee (south)—Comp. flowing 2,000 bbls. 4,950 ft.
South Texas Petroleum Co.'s No. 3 Lee—Drlg. lime and gumbo 3,498 ft.

(Continued on Page 115)

Production

Daily average production of the coastal pools last week follows:

South Texas

Allen	9
Barbers Hill	23,206
Batson	1,177
Big Creek	4,616
Blue Ridge	1,783
Brenham	113
Boling	997
Clay Creek	1,630
Damon Mound	450
DeWalt	11,912
Fannett	1,427
Goose Creek	4,857
Hankamer	....
High Island	1,306
Hull	10,702
Humble	12,871
Jasper	25
Lost Lake	674
Markham	333
Nash	505
North Dayton	1,315
Orange	2,635
Orchard	71
Pierce Junction	11,694
Port Neches	1,902
Raccoon Bend	11,986
Refugio	26,630
Sheeks	682
Saratoga	1,003
Sour Lake	2,375
So. Liberty-So. Dayton	7,202
Spindletop	20,527
West Columbia	6,159
Total South Texas	172,774
Week ending January 25	171,679
Increase	1,095

South Louisiana

Anse La Butte	45
Bayou Blue	76
Bayou Bouillon	52
Black Bayou	40
Caillou Island	263
Edgerly	788
Jennings	1,327
Hackberry	2,839
Lake Barre	255
Lake Pelto	267
Lockport	2,763
New Iberia	5
Port Barre	2,253
Sorrento	100
Starks	576
Sulphur	5,100
Sweet Lake	21
Vinton	3,956
Welsh	164
White Castle	363
Total South Louisiana	21,253
Week ending January 25	19,943
Increase	1,310
Total Gulf Coast	194,027
Week ending January 25	191,622
Increase	2,405

WANTED: *To hear from production men having cut oil and b. s. that is considered hard to treat to pipe line requirements*

THE VEZ COMPANY

Manufacturing Chemists

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TULLOS, LOUISIANA
WICHITA FALLS, TEXAS
BORGER, TEXAS
LULING, TEXAS
BIG SPRING, TEXAS
WINK, TEXAS
PAMPA, TEXAS
BENAVIDES, TEXAS
EL DORADO, ARK.
WICHITA, KANSAS
SEAL BEACH, CALIFORNIA

Seek to Close Kettleman Hills Well

Shutting in of No. 1 Felix Seems to Hinge on Amount of Royalty to Be Paid Operators. Extend Santa Fe Springs Agreement

By L. P. Stockman
Staff Correspondent, California Fields

LOS ANGELES, Calif., Feb. 1.—The Kettleman Hills situation monopolized the spotlight in California during the past week, and, although no final solution was found to the problem confronting operators, all evidence indicates the possibility of an early agreement. The situation is not as complex as appears on the surface and if operators are willing to effect a give-and-take agreement very little difficulty should be experienced in removing the obstacle which is causing the industry genuine concern over the possibility of increased development. No one questions the seriousness of the situation at Kettleman Hills resulting from the recent completion of a new well located on fee-owned acreage just outside the area covered by the Kettleman Hills agreement as any considerable amount of offset drilling would be reflected in increased production.

Due to the general chronic overproduction of crude oil and natural gasoline, the industry in California cannot assimilate any great quantity of Kettleman Hills crude with equanimity because of its exceedingly high gasoline content. This oil, which averages approximately 61 degrees A.P.I., contains about 60 per cent gasoline, 25 per cent kerosene and 15 per cent other light fractions. It is quite obvious that it would not take very much oil from Kettleman Hills to adversely affect both the crude and refined oil markets. The natural gas produced in the Kettleman Hills Field is exceptionally lean, averaging less than one gallon of natural gasoline to each 1,000 feet of natural gas, but the extremely large quantity of natural gas produced more than offsets the other unfavorable characteristics.

A number of plans have been suggested to cope with the situation confronting operators at Kettleman Hills but none of them have yet been approved. Judge E. D. Reiter, chairman of the Kettleman Hills committee, has asked the operating committee to meet with him at an early date in order to recommend a definite procedure. It is the present intention to have the committee remain in session until some definite measure has been approved. Two plans worked out by Messrs. Beal and Swigart will be submitted for consideration, either of which will prove beneficial. The Beal zoning plan contemplates the limiting of future development and the regulation of drilling according to zones, while the Swigart plan eliminates individual development and substitutes unit operation in its place.

A Joint Development

As has already been stated, either of these proposed methods will prove advantageous as they will tend to restrict production. The most effective method of relieving the situation at Kettleman Hills it would seem, however, lies in the removal of the obstacle which threatens to partially void the existing curtailment agreement. This contemplates the shutting in of No. 1 Felix of the Petroleum Securities, in which event there will be no need for the immediate application of either unified development or regulated drilling. This sounds like a rather difficult problem but I am rather inclined to believe that something definite will be worked out along the line mentioned unless the situation is further complicated by the completion of additional wells on fee-owned acreage.

It is the general impression among operators that the lessors holding title to the Felix property will not permit the Petroleum Securities to suspend production because in this event they will not receive any financial return from royalty payments. This is somewhat erroneous because of the fact that there are no lessors involved. Statements that lessors are preventing the Petroleum Securities from suspending production are therefore incorrect. The Petroleum Securities and Felix Oil Co. are jointly interested in the Felix property from a development standpoint as the drilling agreement between these two concerns is a working agreement and is not based on the usual property drilling lease. It has been assumed that the Petroleum Securities leased the property in question from the Felix Oil Co., whereas they are joint operators with a certain percentage of the production belonging to the former and the balance to the latter.

The joint development of the property in question should make it an easy matter to suspend production activities on the Felix property and something along this line may be worked out. A committee, consisting of M. E. Lombardi of the Standard Oil Co., J. R. Pemberton of the Petroleum Securities and R. S. Black of the Continental Oil Co., have been appointed to determine the possibility of effecting a suspension of operations.

From a legal standpoint, the Petroleum Securities as operator of the property in question, and the Felix Oil Co. as only a participating unit, could shut down without jeopardizing its interest in the Felix property since there is no lease subject to cancellation or forfeiture. The company is in a very advantageous position, however, and can almost dictate its own terms in agreeing to any suspension of work to comply with the Kettleman Hills curtailment agreement.

May Pay Monthly Royalty

Information from a reliable source indicates that the Petroleum Securities would consider the suspension of operations on the Felix property if other companies having production would reimburse it on the basis of 40 per cent of the present production of No. 1 Felix. Operators having production have tentatively offered to pay the Petroleum Securities a monthly royalty of 25 per cent of the well's potential. The only thing preventing the suspension of work on the Felix property is therefore apparently the difference between these two figures, and herein lies the possibility of an early solution of the difficulty confronting Kettleman Hills operators. A little concession on each side will mean a continuation of the restriction in production and thus prevent the partial voiding of present curtailment. This is especially important as the Standard Oil Co. has an offset well ready to be placed on production if final overtures are unsuccessful.

Development work in California was featured by two fires during the past week, one of which proved exceptionally disastrous and resulted in the death of one man and serious injuries from burns to seven others. This occurred in the Kettleman Hills Field of Kings County when the absorption plant of the Petroleum Securities literally blew up and sent 40,000 gallons of burning natural gasoline in all directions. The exact cause of the catastrophe may possibly never be definitely determined but a preliminary survey indicates that a vapor line broke in the cooling tower, although another version places the start of the fire at one of the four 12,000-gallon storage tanks. The rugged topography of the Kettleman Hills undoubtedly played a very important part in the explosion and resulting fire. The absence of sufficient level ground to permit efficient construction and operation of the plant in question was an important factor and the location of boilers below the point of operations was another contributing factor. The natural gasoline from the four tanks ran down the hillsides in burning streams and might have resulted in numerous additional fatalities if any wells had been drilling below the plant. The first fire ot the week occurred at Santa Fe Springs when escaping gas from George F. Getty's No. 40 became ignited and burned out the rig flooring and other inflammable material. This was brought under control within a short time, however, and therefore did not cause any substantial loss except in lost drilling time. This fire, however, should serve as a warning of the fire hazard existing in the Santa Fe Springs Field as attempts to effect a unified method for combating oil fires in the congested town lot area have not yet met with success. The Union Oil Co., realizing the fire hazard existing because of the close proximity of rigs in the town lot area some time ago, laid a comprehensive pipe line system covering its various leases in order to be in a better position to quickly combat oil or gas fires. This company is therefore fairly well protected, and, while it undoubtedly would put its resources at the command of other operators in case of emergency,

TANKER SHIPMENTS FROM LOS ANGELES TO ATLANTIC AND GULF COAST PORTS

Commodity—	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Fuel oil	.....	.....	.....	.....	71,950	.....
Diesel and gas oil	73,070	10,439	49,540	7,077	359,861	247,750
Gasoline	355,958	50,851	571,858	81,694	1,865,362	1,737,973
Coastwise—						
Crude oil	267,077	38,154	192,895	27,556	1,065,099	2,027,833
Fuel oil	297,498	42,500	332,100	47,443	1,291,556	1,556,768
Diesel and gas oil	42,104	6,015	27,289	3,898	120,332	80,947
Gasoline	122,136	17,448	256,158	36,594	880,116	883,871
Kerosene	494	71	478	68	3,163	1,139
Exports—						
Crude oil	78,628	11,233	164,085	23,441	613,307	207,240
Fuel oil	385,966	55,138	516,606	73,801	1,258,308	1,520,557
Diesel and gas oil	78,718	11,245	42,057	6,008	242,672	202,615
Gasoline	638,756	91,251	48,401	6,914	1,430,984	1,027,621
Kerosene	89,227	12,747	.....	.....	89,227	215,865

TANKER SHIPMENTS FROM SAN FRANCISCO TO ATLANTIC AND GULF COAST PORTS

Gasoline	.....	.....	.....	.....	.....	254,056
Coastwise—						
Fuel oil	110,007	15,715	44,785	6,398	198,793	212,969
Diesel and gas oil	8,760	1,251	8,751	1,250	25,876	4,023
Gasoline	97,473	13,925	.....	.....	311,730	306,874
Kerosene	2,504	358	.....	.....	10,115	4,280
Exports—						
Crude oil	.....	.....	.....	.....	3,075	71,453
Fuel oil	.....	.....	.....	.....	54,093	.....
Diesel and gas oil	.....	.....	.....	.....	6,050	52,869
Gasoline	.....	.....	52,085	7,441	264,426	546,954
Kerosene	96,077	13,725	29,420	4,203	133,749	68,030
Lubricants	.....	.....	.....	.....	.....	13,693

MOUNT PLEASANT ADDS 1,100 BBLS.; MUSKEGON GETS 90-BBL. WELL

By Special Correspondent

MUSKEGON, Mich., Feb. 2.—The Mount Pleasant Field with three completions having an aggregate initial production of more than 1,100 bbls. and two dry holes led activities in Michigan during the week. In the Pure Oil Co.'s No. 4-C Glen M. Reem, NE SW, Section 7-14n-2w, Greendale Township, Midland County, the Dundee was topped at 3,500 feet and the well was making 700 bbls. at 3,555 feet.

The Leonard Petroleum Co.'s No. 7 McClintic, NW NE, Section 7-14n-3w, Chippewa Township, Isabella County, was a 250-bbl. initial producer in the Dundee topped at 3,530 feet, pay sands at 3,558 feet and completed at 3,590 feet. The Pure Oil Co.'s No. 1 A. N. Ward, SE SW, Section 7-14n-2w, Greendale Township, made 175 bbls. initial, topping the Dundee limestone at 3,517 feet, the pay at 3,542 feet and completed at 3,590 feet.

The New York Petroleum Royalty Co.'s No. 1 Quincy L. Hughes, NE NE, Section 19-15n-3w, Denver Township, Isabella County. topped the Dundee at 3,636 feet, about 100 feet lower than in the proven field, and had two shows of oil at 3,638-50 feet and 3,660-86 feet. Water was struck at 3,702-04 feet where it will be plugged.

The Spiegel Oil & Gas Co.'s No. 1 Conrad, SE SE, Section 4-14n-3w, Chippewa Township, Isabella County, was dry after striking water at 3,660 feet. Dundee was topped at 3,612 feet.

A 90-bbl. oil well in the new pay streak recently discovered beneath the original Dundee and a 5,000,000-foot gasser in the lower Traverse were the principal completions in the Muskegon Field. The Eureka Gas & Oil Co.'s No. 1 H. Buteau, SE NE, Section 12-10-17, is the first in Laketon Township to strike the new and lower pay streak believed to be in the Dundee. Having dwindled to pumping but 2 bbls. a day in the Dundee proper the well was deepened to 2,038-78 feet. The last 3½ feet was made through the new pay streak and the well swabbed and pumped between 90 and 100 bbls. every 24 hours after completion.

A number of other operators who have completed wells in Laketon Township, are now considering moving in rigs to deepen their wells. Most of the wells in Laketon Township were completed in the Dundee because few struck oil or gas in the upper or lower Traverse in paying quantities.

The Eureka-Buteau well was one of the flashy upper Traverse producers which made about 1,500 bbls. initial but soon lost gas pressure and decreased to a very small flow of oil. The well was an original 450-bbl. producer in the Dundee.

The new dry gasser in the lower Traverse is the largest gas well brought in for several months. The well is the Dixie Oil Co.'s No. 2-A Charles Reeths, SW NW, Section 9-10-16, a short distance below the discovery well of the

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its operations are still jeopardized to some extent because of the negligence of other operators to install similar work.

Hearing on Gas Law

The State of California, supported by the major companies and all progressive independents, resumes its attempt to force compliance with the gas conservation law in the Superior Court at Los Angeles February 3. If the pending action against Santa Fe Springs operators is kept in the Superior Court, we may anticipate the possible issuance of a temporary restraining order in the near future, but, if, on the other hand, those opposing enforcement of the statute in question resort to technicalities, it may be prolonged indefinitely. The importance of the California gas conservation law is too well known to require comment except to say that it will eliminate the necessity of further crude oil curtailment if it stands the acid test. Similar actions to force compliance with the existing statute prohibiting the waste of natural gas have also been instituted against operators at Long Beach and Kettleman Hills. Operators in the latter area have been cited to show cause in the Superior Court at Hanford on February 10 why a restraining order should not be issued.

Crude oil curtailment has alleviated conditions in California to a substantial extent since its initiation in October of last year but the situation is still far from satisfactory. This work has resulted in a substantial artificial reduction in crude oil production and this restriction has been reflected in a corresponding drop in the production of natural gas. During October, previous to the initiation of curtailment work, wastage of natural gas in California averaged 967,000,000 feet daily. During the following month only 608,000,000 feet were dissipated into the air, the reduction being due to the pinching back of crude oil production. Comparable figures showing the production and blowoff of natural gas during December and January have not yet been compiled but a further substantial reduction has probably been effected. The accompanying chart showing production of crude oil in California since July, 1928, and the changes in crude oil stocks during the same period graphically portrays the changing conditions during this time. The effect of crude oil curtailment during the past three months is reflected by an almost vertical drop in the production curve during November and a subsequent flattening out thereafter. It is interesting to note, however, that production during the past three months, while fairly well stabilized, is still higher than the output during 1928. During 1928 and 1929 the trend of State production was decidedly upward until being arrested by curtailment work in November and December of the latter year. The present potential production of the State approximates 1,000,000 bbls. daily and would undoubtedly exceed this figure for a short period of time if existing restrictions were to be lifted.

Santa Fe Springs

Practically all operators at Santa Fe Springs have ratified the proposal to extend the curtailment period for another 90 days and nearly all of the agreements have been signed and returned to Umpire Grimm. The general committee originally recommended an extension of 120 days in the curtailment agreement but considerable opposition arose and it was decided at the last minute to make it 90 days instead. Daily production is expected to show a substantial increase during the next few weeks as there are quite a number of new wells scheduled for completion during this period. During the coming week about 12 new wells should be finished and this should be reflected in increased production. The General Petroleum celebrated the past week by completing three wells which registered an aggregate initial daily production of 4,984 bbls. Two of these projects, No. 220 Santa Fe and No. 186-H Santa Fe Community, were new wells, the former showing an initial of 1,940 bbls. daily from 8,000 feet and the latter 1,494 bbls. per day from 8,010 feet. No. 206 Santa Fe, a former upper zone producer, was recompleted flowing 1,550 bbls. daily upon being redrilled and deepened to 7,995 feet.

The Standard finished two wells during the past seven days' period and incidentally increased its daily production 2,505 bbls. These new wells were No. 25 South Whittier Community, which tanked 1,610 bbls. during the initial 24-hour test following completion at 7,920 feet, and No. 27 on the same lease finished doing 895 bbls. per day from 7,941 feet. No. 22 Walker came in as a gas well during the course of a water test at 7,333 feet but it was subsequently killed and will be carried down deeper into the Clarke zone. The Associated Oil Co. finished a nice well on the Fulton lease when No. 3 was brought in under a natural flow making 1,415 bbls. of clean 33.9 gravity oil daily. This well was originally drilled to 8,300 feet but was subsequently plugged back to 8,033 feet and the 5-inch perforated from 7,960 feet to 8,000 feet.

The Shell, with several new wells nearing completion and scheduled to be brought in some time during the coming week, finished No. 29 Golay a few days ago doing 606 bbls. initially from 7,840 feet. During the early part of the week the Richfield Oil Co. recompleted No. 1 Industrial flowing 2,450 bbls. of 33.6 gravity oil and 5,000,000 feet of wet gas daily from 8,040 feet, the hole having been finished with a 3½-inch liner carrying 690 feet of perforated. The Texas Company also chalked up a recompletion this week when No. 3 Wickman was returned to production flowing 1,070 bbls. initially from the Clarke zone at 7,860 feet. The Union Oil Co.'s contribution to the field's list of producers was No. 4 Bell, a new well finished flowing 816 bbls. daily from 7,150 feet. There are so many wells nearing completion at Santa Fe Springs that field production may possibly reach the 200,000-bbl. mark around the middle of February unless operators effect drastic reductions. A check indicates the probability that the major companies may be obliged to effect a reduction of 65 per cent in their potential for the coming curtailment period.

Elwood

The Barnsdall Oil Co., developing the Elwood Field of Santa Barbara County in conjunction with the Rio Grande Oil Co., has just finished its eighteenth successful completion in that prolific district. The new well finished this week was No. 14 Bell-Luton, brought in under a natural flow doing 4,000 bbls. of the usual clean 36.7 gravity oil daily from 3,637 feet. It will be permitted to produce unrestrained for the allowable five-day flow test to determine its potential, after which it will be pinched back to around 2,500 bbls. per day in conformity with the curtailment agreement covering this field. This completion, an offset to No. 1 Goleta of the Pacific Western Oil Co., brought the Barnsdall and Rio Grande's daily production at Elwood up to approximately 26,000 bbls. This just about completes the drilling program in this field until the curtailment agreement expires, as all work has been temporarily suspended except for drilling operations on No. 17 Bell-Luton and the Bankline's well No. 2 on tideland drilling permit No. 89.

In the Summerland Field of Santa Barbara County, George F. Getty finished well No. 11 on State tideland permit No. 16 pumping 75 bbls. of 18.7 gravity oil daily from 1,474 feet. This gives the Getty organization an aggregate daily production in this field of approximately 200 bbls., coming from two wells of tideland permit No. 16 and a like number on fee property. The Lincoln Drilling Co., discoverer of the second productive zone in this field, has three wells on the Williams lease doing 171 bbls. per day. The Chanslor-Canfield Midway Oil Co.'s No. 2-A Hobson at Rincon has resolved itself into a deep test as it has already passed the 5,625-foot level without picking up the pay. No. 6-C Hobson was spudded in this week and preparations are being made to start work on another new well on the same lease, No. 7. The General Petroleum is reaming No. 2 Ferguson, a tideland drilling project in this field, at 2,365 feet and will probably begin making new hole soon. Two new wells were spudded in at Ventura Avenue this week, one by the Associated and another by the Shell. Fishing jobs and other mechanical difficulties have retarded the completion of several wells during the past few

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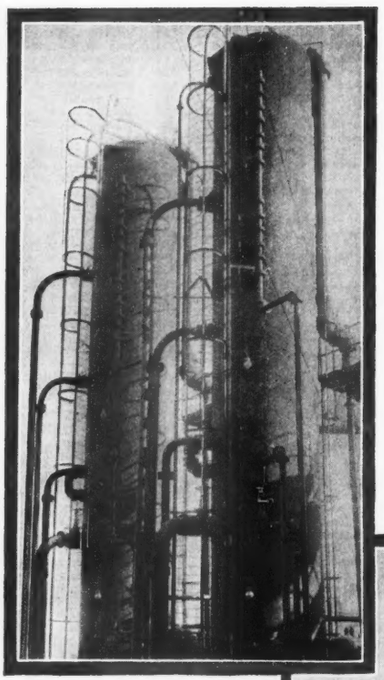
IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well, location—	S.T.R.	Depth	Status
Union, No. 1 Buel Canyon, Santa Barbara Co.	X- -31	3,295	hd. sd. drilling
Tannehill, L. B., No. 1 Los Olivas, Santa Barbara Co.	2- 7-31	2,755	br. sh. drilling
Standard, No. 1 Point Conception, Santa Barbara Co.	X- 5-34	3,750	br. sh. drilling
Ohio Oil Co., No. 1 Lompoc, Santa Barbara Co.	2- 6-34	900	hd. sd. drilling
Calif. Oil Prop., No. 1 San Marcos, Santa Barbara Co.	3- 4-28	4,040	plug 3,850 ft.
Carey, A., No. 1 Goleta, Santa Barbara Co.	1- 4-28	2,700	sd. sh. drilling
General Pet., No. 1 Goleta, Santa Barbara Co.	21- 4-28	4,533	gas well—idle
General Pet., No. 3 Goleta, Santa Barbara Co.	21- 4-28	3,700	sd. sh. drilling
General Pet., No. 1 Goleta Tideland, Santa Barbara Co.	21- 4-28	1,025	suspended
General Pet., No. 2 Goleta Tideland, Santa Barbara Co.	21- 4-28	725	sd. sh. drilling
General Pet., No. 3 Goleta Tideland, Santa Barbara Co.	21- 4-28	533	cemented
General Pet., No. 4 Goleta Tideland, Santa Barbara Co.	21- 4-28	950	sd. sh. drilling
General Pet., No. 5 Goleta Tideland, Santa Barbara Co.	21- 4-28	1,040	suspended
U. S. Pet., No. 1 Goleta Tideland, Santa Barbara Co.	20- 4-28	150	cemented
U. S. Pet., No. 2 Goleta Tideland, Santa Barbara Co.	20- 4-28	700	sd. sh. drilling
U. S. Pet., No. 3 Goleta Tideland, Santa Barbara Co.	20- 4-28	580	br. sh. drilling
Macmillan Pet., No. 1 Goleta Tideland, Santa Barbara Co.	21- 4-28	175	suspended
Standard, No. 2 Goleta, Santa Barbara Co.	X- 4-29	2,550	br. sh. drilling
Tannehill, L. B., No. 1 Goleta, Santa Barbara Co.	24- 4-29	5,554	abandoning
General Pet., No. 3 Capitan, Santa Barbara Co.	4- 4-30	1,460	sd. sh. drilling
Oakburn Oil Co., No. 1 Capitan, Santa Barbara Co.	4- 4-30	410	sd. sh. drilling
Oakburn Oil Co., No. 2 Capitan, Santa Barbara Co.	4- 4-30	200	cemented
Oakburn Oil Co., No. 3 Capitan, Santa Barbara Co.	5- 4-30	410	suspended
Oakburn Oil Co., No. 4 Capitan, Santa Barbara Co.	4- 4-30	...	building pier
Oakburn Oil Co., No. 5 Capitan, Santa Barbara Co.	4- 4-30	200	cemented
Shell Oil Corp., No. 1 Capitan, Santa Barbara Co.	4- 4-30	1,305	pump 130 bbls.
Fields Gasoline Co., No. 1 Orcutt, Santa Barbara Co.	36-10-34	5,267	testing
Wildcat Oil Co., No. 1 Santa Maria, Santa Barbara Co.	20-10-35	4,260	br. sh. drilling
Pacific Western, No. 1 Gibraltar, Santa Barbara Co.	14- 5-27	2,345	sd. sh. drilling
Shell, No. 1 Summerland, Santa Barbara Co.	18- 4-25	2,094	br. sh. drilling
Standard, No. 1 Casitas, Santa Barbara Co.	26- 4-25	755	sd. sh. drilling
Continental, No. 1 Carpenteria, Santa Barbara Co.	33- 4-25	4,130	gas well—idle
Continental, Tideland permit No. 121, Santa Barbara Co.	33- 4-25	55	suspended
Continental, Tideland permit No. 122, Santa Barbara Co.	33- 4-25	158	suspended
Continental, Tideland permit No. 123, Santa Barbara Co.	33- 4-25	125	suspended
Continental, Tideland permit No. 124, Santa Barbara Co.	33- 4-25	415	suspended
Continental, Tideland permit No. 125, Santa Barbara Co.	33- 4-25	120	suspended
Continental, Tideland permit No. 126, Santa Barbara Co.	33- 4-25	200	suspended
Continental, Tideland permit No. 127, Santa Barbara Co.	33- 4-25	145	suspended
Continental, Tideland permit No. 128, Santa Barbara Co.	33- 4-25	98	suspended
Continental, Tideland permit No. 129, Santa Barbara Co.	33- 4-25	97	suspended
Getty, George F., No. 1 Carpenteria, Santa Barbara Co.	32- 4-25	68	cemented
Getty, George F., No. 2 Carpenteria, Santa Barbara Co.	32- 4-25	55	cemented
Standard, No. 5-9 Saticoy, Ventura Co.	10- 2-22	8,460	cleaning out
Bolsa Chica, No. 1-A Temescal, Ventura Co.	4- 4-18	1,650	br. sh. drilling
Fennell, E. A., No. 1 Piru, Ventura Co.	13- 4-19	650	sd. drilling
Associated, No. 1 Rincon, Ventura Co.	19- 4-24	500	sd. sh. drilling
Continental, No. 3 Sulphur Mountain, Ventura Co.	21- 4-22	6,200	br. sh. drilling
Lockwood Oil Co., well No. 1, Ventura Co.	28- 8-21	682	suspended
Milham Explt'n., No. 9 Buttonwillow, Kern Co.	8-28-23	4,990	cleaning out
Lincoln Drlg. Co., No. 1 Buttonwillow, Kern Co.	17-29-24	175	sd. drilling
Shell, No. 1 Weed Patch, Kern Co.	29-30-29	mtl.	building rig
Elmer Oil Co., No. 1 Bena, Kern Co.	15-30-30	3,800	suspended
Elmer Oil Co., No. 1-A Rosedale, Kern Co.	33-29-26	5,262	suspended
The Texas Company, No. 1 Edison, Kern Co.	23-29-29	5,225	br. sh. drilling
Symark Oil Co., No. 1 Edison, Kern Co.	24-29-29	2,130	suspended
Sayre, F. M., No. 1 Edison, Kern Co.	5-30-29	2,705	sd. sh. drilling
McVey, Max, No. 1 Jasmine, Kern Co.	23-25-27	rig	suspended
Union, No. 2 San Emidio, Kern Co.	5-10-21	3,915	abandoned
Mallery-Willard, No. 1 San Emidio, Kern Co.	9-10-23	550	suspended
Currency Pet. Co., No. 1 Jacalitos, Fresno Co.	28-21-14	2,870	hd. sd. drilling
Knudsen, John, No. 1 Jacalitos, Fresno Co.	14-21-14	1,490	suspended
Rio Grande Oil Co., No. 1 Kerman, Fresno Co.	14-13-17	5,000	suspended
Petroleum Securities, No. 2 Huron, Fresno Co.	28-20-16	7,390	milling
Western Gulf, No. 1 Penoche Valley, Fresno Co.	26-15-12	111	sd. drilling
Union, No. 1 Huasna, San Luis Obispo Co.	34-32-15	4,158	suspended
Union, No. 1 North Huasna, San Luis Obispo Co.	12-32-14	5,250	br. sh. drilling
Midwest Refining Co., No. 1 Huasna, San Luis Obispo Co.	34-31-15	2,410	cemented
Panorama Oil Co., well No. 1, San Luis Obispo Co.	7-31-21	4,019	fishing
Paso Robles Synd., No. 1 Creston, San Luis Obispo Co.	27-27-11	3,742	suspended
Latin-American, No. 1 Shandon, San Luis Obispo Co.	31-27-15	4,160	suspended
Chessher, H. B., No. 1 Dudley, Monterey Co.	8-22- 9	245	suspended
Union, No. 1 King City, Monterey Co.	8-22- 8	2,700	cleaning out
Standard, No. 1 King City, Monterey Co.	23-22- 7	3,460	hd. sd. drilling
Pacific Inland Oil Co., No. 1 Parkfield, Monterey Co.	19-23-15	781	suspended
Penn Western, No. 1 Tulare Lake, Kings Co.	24-21-18	1,338	suspended
Well Port Oil Co., No. 1 Devils Den, Kings Co.	9-24-17	2,494	br. sh. drilling
Oceanside Oil Co., No. 1 Kreyenhagen, Kings Co.	32-22-16	300	suspended
Getty, George F., No. 1 Dutton, Madera Co.	18-13-16	4,615	redrilling
Twin State Oil Co., No. 1 Soldani, Menlocino Co.	14-12- 7	2,020	sd. sh. drilling
Barnhart Trust, No. 1 Oakdale, San Joaquin Co.	3- 2-10	2,550	fishing
Inland Oil Co., No. 1 Visalia, Tulare Co.	24-17-24	2,030	suspended
White, Roy, No. 1 Pixley, Tulare Co.	8-23-26	3,914	hd. sd. drilling
Terminal Oil Co., No. 1 Tulare, Tulare Co.	29-20-25	4,198	suspended
Terra Bella Oil Co., No. 1 Porterville, Tulare Co.	35-22-27	760	sd. sh. drilling

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Simmel, L. G., No. 1 Inglewood, Los Angeles Co.	21- 2-14	4,400	sd. sh. drilling
Raleigh Oil Co., No. 1 Malibu, Los Angeles Co.	1- 2-19	3,460	sd. sh. drilling
Clearwater Oil Co., No. 1 Bellflower, Los Angeles Co.	21- 3-12	4,000	gr. sd. drilling
Getty, George F., No. 1 Riviera, Los Angeles Co.	27- 2-12	1,914	hd. sd. drilling
Burlingham Pet., No. 1 Compton, Los Angeles Co.	17- 3-13	2,660	hd. sd. drilling
Hanners, George, No. 1 Watts, Los Angeles Co.	3- 3-13	3,655	suspended
Diller, W., No. 1 Watts, Los Angeles Co.	8- 3-17	3,396	sd. sh. drilling
Calif. Well Drlg. Co., No. 1 Compton, Los Angeles Co.	11- 4-13	8,500	suspended
Archer Oil Co., No. 1 Watson, Los Angeles Co.	17- 4-13	5,557	fishing
Harber Oil Co., No. 1 Wilmington, Los Angeles Co.	18- 4-13	mtl.	building rig
Anchor Oil Co., No. 1 Puente, Los Angeles Co.	19- 2-10	4,820	suspended
Rucker, R. C., No. 1 Puente, Los Angeles Co.	27- 2-10	3,275	testing
The State Co., No. 1 Puente, Los Angeles Co.	5- 2-10	4,101	suspended
Sherman, J. W., No. 1 Puente, Los Angeles Co.	33- 2- 8	474	sd. sh. drilling
Keck & Hall, No. 1 Puente, Los Angeles Co.	32- 2- 8	1,130	sd. sh. drilling
Urmi Oil Co., No. 1 Puente, Los Angeles Co.	31- 2- 8	1,420	hd. sd. drilling
Los Gatos Oil Co., No. 1 El Monte, Los Angeles Co.	16- 1-11	1,725	hd. sd. drilling
Coastline, No. 1 Devils Canyon, Los Angeles Co.	21- 5-17	2,542	plug 2,100 ft.
Olympic Corp., No. 1 Calabasas, Los Angeles Co.	18- 1-17	675	hd. sd. drilling
Martin, J. W., No. 1 Newhall, Los Angeles Co.	22- 1-17	1,040	sd. sh. drilling
Consolidated Oil Co., No. 1 Newhall, Los Angeles Co.	8- 3-16	995	cleaning out
National Sec., No. 1 Newhall, Los Angeles Co.	1- 3-16	870	hd. sd. drilling
Anderson, P. B., No. 1 Hasley Canyon, Los Angeles Co.	1- 3-16	900	suspended
Union, No. 1 Coyote, Sansinena, Los Angeles Co.	30- 2-10	2,150	redrilling
Pareco Oil Co., No. 1 Whittier, Los Angeles Co.	29- 2-11	....	location
Beard, G. F., No. 1 Brea Canyon, Los Angeles Co.	30- 2- 9	1,099	suspended
Western Gulf, No. 1 Brea Canyon, Los Angeles Co.	28- 2- 9	2,094	br. sh. drilling
Standard, No. 1 Coyote, Bastanchury, Orange Co.	21- 3-10	4,165	sd. sh. drilling
Shell, No. 1 Coyote, Orange Co.	28- 3-10	6,050	redrilling
Union Oil Co., No. 1 Richfield, Orange Co.	13- 3- 9	2,600	granite
Mesa Pet., No. 1 Newport, Orange Co.	21- 6-10	3,380	suspended
Oil Well Eng. Co., No. 1 Newport, Orange Co.	21- 6-10	2,795	suspended
Hall Pet. Co., No. 1-A Murrietta, Riverside Co.	23- 7- 3	701	cemented
Hemet Pet. Co., No. 1 Ward, Riverside Co.	9- 5- 1	3,505	cleaning out
Imperial Valley Oil Co., well No. 1, Imperial Co.	32-11-10	2,980	suspended
Turner, S. S., No. 1 Escondido, San Diego Co.	25-12- 2	2,155	sd. sh. drilling
McGregor Synd., No. 1 Del Mar, San Diego Co.	17-14- 3	1,120	fishing
Borderland Oil Co., No. 1 Encinitas, San Diego Co.	X-13- 4	1,905	sd. sh. drilling
Grey, H. H., No. 1 Redlands, San Bernardino Co.	25- 1- 2	2,525	cleaning out
Duncan, N. I., No. 1 Mojave, San Bernardino Co.	8- 4-6	rig	rigging up
Girard & Grimes, No. 1 Corona, San Bernardino Co.	8- 2-8	310	redrilling

RESULTS



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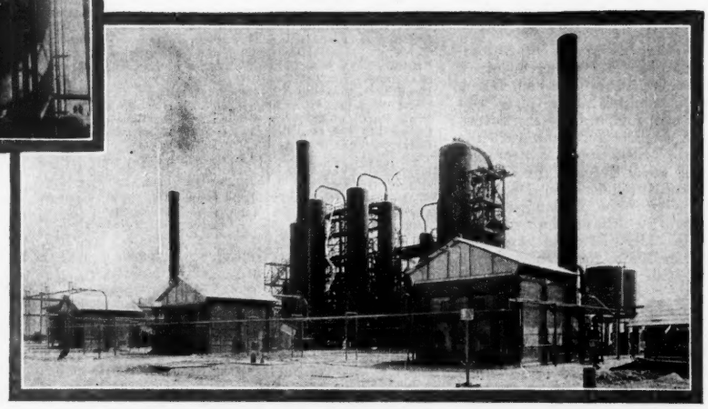

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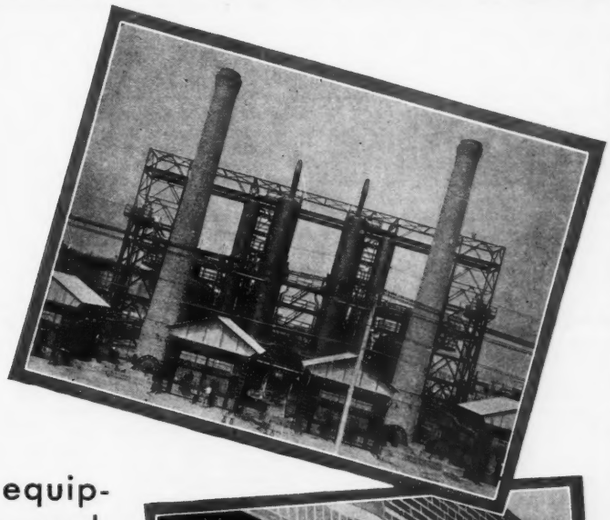

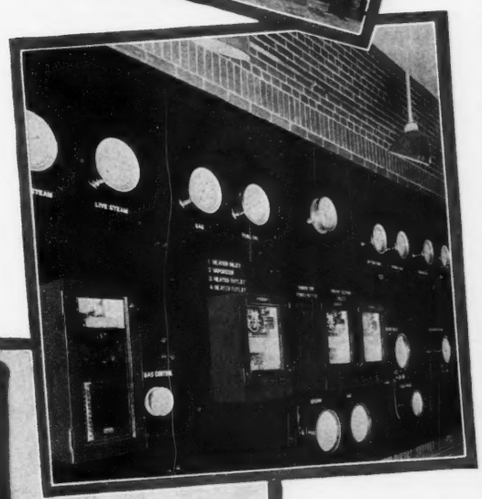

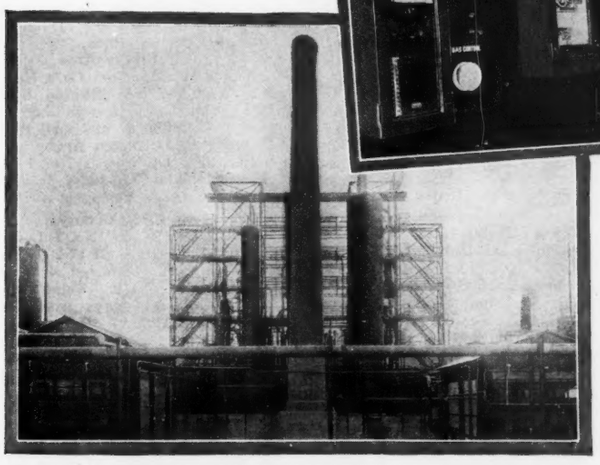

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TULSA HOUSTON BOSTON

Now Seek Curtailment in Hobbs Area

Following Completion of Well Gauging 8,585 Bbls. of 35.4 Gravity Oil and Two Other Good Producers in Lea County

By Tolbert R. Ingram
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., Feb. 2.—The Humble Oil & Refining Co.'s No. 1 Bower, the largest well ever completed in New Mexico, and which extended the Hobbs Pool 3 miles, gauged 2,146 bbls. in 6 hours, or at the rate of 8,585 bbls. a day, the oil testing 35.4 gravity. Rumors of pipe line construction continue while a meeting of operators to discuss a situation developed by bringing in of the well probably will be held this week. The Midwest's No. 13 Terry and the Shell Petroleum Corp.'s No. 1 Thorpe have been added to the list of Hobbs producers, both being good wells. The Texas Production Co.'s No. 2-A and No. 1-B, both on State land, are being completed in the Lea Pool, and Leonard & Levers have completed a gas well in the Maljamar area in Eddy County.

A Madison lime test drilled on the Nowood structure in Washakie County, Wyoming, is being abandoned by the California Exploration Co.

Most of the Utah wildcats are shut down on account of the weather.

There were no completions in Colorado and little activity reported.

A test of the validity of the Secretary of the Interior's order of March 12, 1929, instructing the land department to reject all applications for prospecting permits is to be made in the Federal district court in Utah. William H. Kershaw and Harry E. Rose have petitioned the court at Salt Lake City for a writ of mandamus to compel Eli P. Taylor, registrar of the land office at Salt Lake City, to accept their applications for prospecting permits in southeastern Utah.

NEW MEXICO

The Humble Oil & Refining Co.'s No. 1 Bowers, C NE SE, Section 30-18-38, in the Hobbs area in Lea County, the largest well ever completed in New Mexico and one that is of more than ordinary importance, continued to occupy first place in interest this week. It was opened for several short tests in one of which it flowed 464 bbls. in 1 hour and in another it put 445 bbls. into the tank in a similar period. The most important test was conducted by representatives of the United States Bureau of Mines in which the well made 2,146 bbls. in 6 hours, an average of 357.6 bbls. per hour, or at the rate of 8,585 bbls. per day, through a 4-inch line with a pressure of 75 pounds when open and 400 pounds when closed. It also made 8,000,000 feet of gas during the period. The first oil tested 37.5 gravity and another 36 gravity. The government test showed 35.4 gravity, which is more in line with that produced in the other wells. The well, which extends the Hobbs Pool 3 miles to the northwest, runs about 100 feet higher than the wells to the southeast. The elevation is 3,653 feet and the big pay was found at 4,058-4,106 feet. Approximately 63,000,000 feet of gas and several hundred barrels of oil per day, the latter being of much higher gravity, was cased off in upper horizons. Tubing will be run and the well will be shut in indefinitely.

The completion of this well again opens the question of what is to be done with the oil in the Hobbs Pool and the effect it will have on additional drilling. The Atlantic, Shell, Humble, Texas and Illinois Pipe Line companies are all mentioned, but these still remain in the form of rumors. The Humble's line north from Winkler County in the Jal Pool appears to be a logical development, but it is known that recently the Midwest sought a connection for a small well in the Jal Pool, and the Humble would not take it because it had reached its pipe line capacity. The oil was turned over to The Texas Company. Also, the Empire Gas & Fuel Co.'s latest completion in the Jal Pool, its No. 1 Lindley, is pinched down to 300 bbls. per day because that is all the Humble line can take. The Shell, which also has been reported making preparations to build, now has its own production in the Hobbs Pool and considerable acreage to be developed. The Illinois Pipe Line Co. has a line from the west into the Maljamar area and is listed among the possibilities.

Operators Seek Agreement

The question of drilling additional wells is considered of more importance just at present and the operators are very hopeful of some agreement being reached to restrict the number of new wells. If some understanding can be reached before wells are drilled, it is believed the situation can be kept in hand better than if allowed to drag along until wells are drilled into the pay and prorating has to be met. It is expected a meeting of operators will be held next week to consider the situation. The wells heretofore completed in the pool now appear to be near the southeastern edge, but between these and the Humble well is a lot of territory controlled by the Amerada, Ohio, Continental, Shell, Sun, Standard of California and other companies. One new location has been made midway between the Humble well and the other producers, but unless some agreement is reached it is expected at least a dozen will be made shortly. The new location is the Ohio Oil Co.'s No. 1 State, 1,670 feet from the east line and 2,310 feet from the south line of Section 32-18-38, 1¼ miles southeast of the Humble well. The Amerada Petroleum Corp. has the offset acreage on the east and the Shell Petroleum Corp. the offset acreage on the north. The Sun Oil Co. has a location in the NE cor., Section 5-19-38, and the Ohio is moving in material for its No. 1 State, NE cor. SW, Section 30-18-38, half a mile west of the Humble well, for which location was made some time ago and cellar dug.

Two other producers added to the list in the Hobbs Pool are the Midwest Refining Co.'s No. 13 Terry, SE NE SW, Section 10-19-38, which found the pay at 4,110-20 feet, and the Shell Petroleum Corp.'s No. 1 Thorpe, SW NW SE, Section 10-19-38, an offset to the Midwest well. The Midwest well was drilled to a total depth of 4,179 feet and flowed 743 bbls. the first 24 hours and 900 bbls. the second 24 hours. The oil tested 35.5 gravity. The Shell's No. 1 Thorpe found the pay at 4,074-85, 4,142 and 4,151-55 feet and was drilled to 4,157 feet. It flowed 660 bbls. the first 12 hours. The only drilling well is the Midwest's No. 6 Wright, NW cor. SW, Section 14-19-38, which is bottomed at 4,071 feet and waiting for cement to harden. The 8⅝-inch was set on bottom.

Jal Area

Empire Gas & Fuel Co.'s No. 1 Lindley, C NE SE, Section 14-25-36, which recently was completed at a total depth of 3,379 feet, produced 100 bbls. the first hour, of which 20 per cent was basic sediment. It is averaging 300 bbls. a day on choke due to the lack of pipe line capacity. It is also making 5,000,000 feet of gas per day. The elevation is 3,103 feet and the top of the lime was at 2,920 feet. Magnolia Petroleum Co.'s No. 1-X Lindley, SE cor. NE, Section 26-25-36, is bottomed at 2,961 feet in brown lime and preparing to run the 8¼-inch. The top of the lime was at 2,951 feet and the elevation 3,040 feet. Empire Gas & Fuel Co.'s No. 2 Lindley, NE cor. SE, Section 14-25-36, is bottomed at 504 feet in red rock with the 12½-inch cemented at that depth.

Lea Area

The Texas Production Co.'s No. 2-A State, SW cor., Lot 8, Section 2-21-33, one location west of its No. 1-A, a recent completion, which is running 20 feet higher than the last named, is bottomed at 3,731 feet, steel line measurement, and swabbed 291 bbls. in 5 hours and 45 minutes. In another test it swabbed 160 bbls. in 2 hours. This company's No. 1-B State, SW cor., Lot 5, Section 1-21-33, one location to the east of its No. 1-A and in the direction of the recent failure in the Amerada Petroleum Corp.'s well, is reported to have found some bottom water at 3,790 feet and to be plugging back. It had 2,700 feet of oil in the hole and appears to be close to the edge. Snowden & McSweeny's No. 1 State, NW cor. SW, Section 1-21-33, is drilling at 3,677 feet in white lime and had a slight show of oil at 3,655 feet.

Empire Area

Empire Gas & Fuel Co.'s No. 3-B State, SW NE SE, Section 5-21-35, is bottomed at 4,663 feet in lime and recementing the 6⅝-inch.

Eunice Area

Empire Gas & Fuel Co.'s No. 1 Closson, NE NW SE, Section 6-22-36, is bottomed at 3,745 feet in lime and preparing to mud hole and drill by tools.

Lovington Area

Barnsdall Oil Corp.'s No. 1 Bronson, SE cor., Section 28-16-38, is drilling at 3,889 feet in anhydrite.

Eddy County

Leonard & Levers' No. 1 Levers, NW cor. SE, Section 21-17-29, Maljamar area, has been completed as a gas well after plugging back. Total depth was 3,587 feet. Gas pays were found at 2,545 and 3,222-27 feet. It gauged 1,000,000 feet and the Pecos Valley Gas Co. has made connections and is taking 600,000 feet a day. The elevation is 3,594 feet, the top of the salt was at 300 feet, the base at 690 feet and the top of the lime at 2,110 feet. Etz Brothers' No. 1 Etz, C SE SE, Section 13-16-30, had a show of oil at 3,812 feet and is drilling ahead. Naylor and others' No. 2 Danciger, NW cor. SW, Section 18-17-31, is bottomed at 3,491 feet with the bit in the hole. At this depth it swabbed 120 bbls. in 24 hours. Henderson, Dexter & Blair's No. 1 Arnold, SE SE, Section 23-17-30, is drilling at 2,800 feet and had a show of oil at 2,675 feet. This firm has made a location for its No. 1 Grier, 2,310 feet from the north line and 330 feet from the west line, Section 21-16-31, midway between the Etz Brothers' No. 1 Etz and the Texas Production Co.'s No. 1 Robinson. L. M. Lockhart and others' No. 2 Wooley, NE cor., Section 28-17-30, commenced spudding on January 17 and is drilling at 325 feet.

Northwest Area

Twelve inches of snow on the ground

(Continued on Page 130)

TWO NEW PRODUCING WELLS BRING RED COULEE DISTRICT TO THE FORE

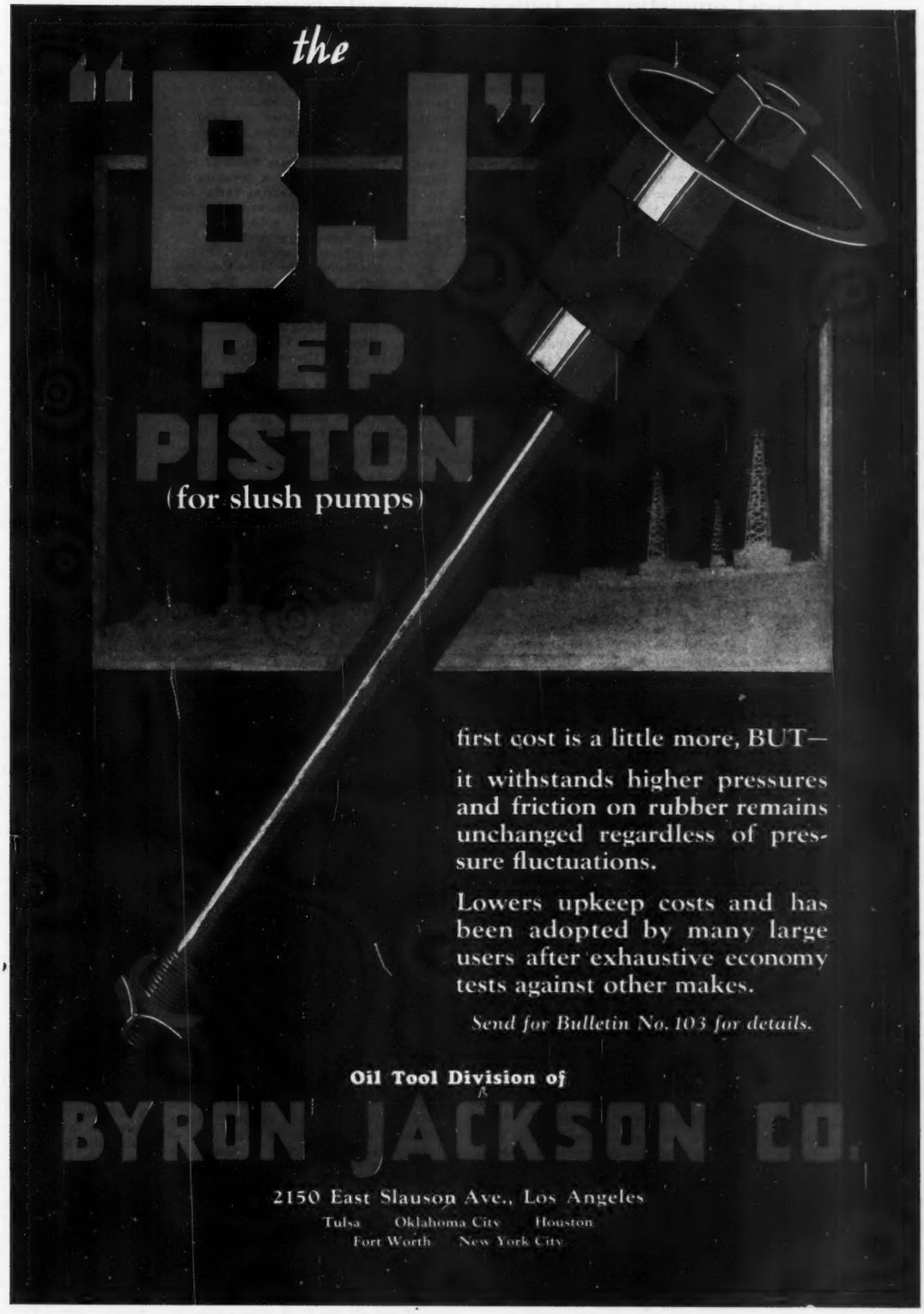
By Victor Lauriston
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, Feb. 1.—Two new producing wells brought the international Red Coulee structure on the Alberta-Montana boundary to the fore this week. These producers, both on the Montana end, are the first completions since Vanalta Oils' No. 1 two months ago. Mid-Continent Oil & Refining Co.'s No. 1, NE Section 3-37-4w, offsetting Vanalta's discovery well, was the first to come in. After shutting off a strong gas flow between 2,270 and 2,400 feet, it got the oil sand at 2,481 feet. Oil rose nearly 2,000 feet in the hole within a short time, and a swabbing test secured 82 bbls. in eight hours, or at the rate of 240 bbls. a day. A settled production between 100 and 150 bbls. is looked for. The test got its production in the Vanalta sand at 2,481 feet, between the Sunburst and the Ellis, compared with 2,390 feet in the Vanalta discovery. The oil is 32 gravity, practically the same as the Vanalta production. Mid-Continent's No. 1 offsets Vanalta's No. 1, being about 400 feet south of the discovery and immediately south of the international boundary. The drill was carried 9½ feet into the sand. gas production of around 2,000,000 feet was encountered in the gas sand below 2,270 feet. Mid-Continent Oil & Refining Co. was organized by D. A. McDonald, president of the Regent Oil Co. of Calgary, and was financed largely by Calgary, Lethbridge and Vancouver capital. It holds 196 acres on the Red Coulee structure south of the Vanalta acreage and is planning to drill immediately a series of three additional wells on its holdings. Production from Mid-Continent's No. 1 will probably be marketed to the Maple Leaf refinery at Coutts, Alta., and a 6-mile line will be laid this spring to handle crude from the Red Coulee Field.

South of Mid-Continent's No. 1, Cosmos Oil Co.'s No. 1 Hannah Porter has drilled into what looks like far larger production. At 2,408 feet it got a gas flow measuring 5,500,000 feet a day, apparently in the Sunburst sand, with tools in the hole. The control head was found too light to hold the gas, and operations were temporarily suspended, the intention being to put on a drilling gauge. The boiler was moved back and the crew was just getting steam up when the well started to shoot oil over the derrick. Production is now being got under control, and is estimated between 500 and 600 bbls. a day, similar to the Vanalta crude. It is planned to deepen the test 70 feet to the Vanalta sand, present production coming entirely from the Sunburst. Cosmos Oil Co. holds 480 acres south of the Mid-Continent holdings, Cosmos' No. 1 being about a half-mile south of the Mid-Continent producer.

Monalta Oil Co.'s No. 2 Buckley is reported working on top of the gas sand, and is expected to be the next test on the Red Coulee structure to get production. It is also on the Montana end. On the Alberta end, Vanalta Oil's No. 1, Section 4-1-16w4, is once more on steady production, making 700 bbls. of 32 gravity crude in seven days from 8 feet in the Vanalta sand, which is estimated 40 feet thick. Vanalta's No.

(Continued on Page 120)


the
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Reclaiming Old Wells in Lima Field

Central Ohio Gas Activity Chief Feature in Central West. Two Completions in Indiana. Dupo Field Busiest in Illinois.

By Whit
Staff Correspondent, Central West Fields

FINDLAY, Ohio, Feb. 3.—There were no completions reported from the Lima Field for the week, and few from Indiana and Illinois, while in Central Ohio division the drill has been moving along steadily as most of the development work under way is for gas.

Fred Dressler has reclaimed and cleaned out old No. 4 well on the G. M. Fisher farm, SW, Section 4, Benton Township, Ottawa County, and is pumping 2 bbls. daily. R. Paulsen has reclaimed and cleaned out old No. 4 well on the Noah Perry farm, SW, Section 31, Oregon Township, Locas County, and is pumping 1 bbl. per day. Many of the old wells over the Lima Field could be reclaimed, especially where many wells were drilled less than 100 feet in the Trenton, the producing formation.

In Wood County, Freedom Township, near Pemberville, August Bushman and others have abandoned old No. 6 on the Edward Driftmyer farm, Section 12. In Troy Township, D. J. Klingman abandoned Nos. 1 and 2 W. H. Hartman, Section 12. Pelton, Davis & Ruedy are drilling on the J. R. Woodbury, Section 20, Plain Township, just out from Bowling Green.

Keiser Oil Co. is drilling No. 3 Joe Ernst, Section 31, Liberty Township, Hancock County, and R. T. Rittenhouse is drilling No. 7 on the Frank Freed farm, in Eagle Township, same county.

In Allen County, Bath Township, C. A. & F. J. Peavy abandoned No. 1 E. T. Sandy, Section 12, and Ira B. Post did the same with No. 2 C. A. and W. F. Landis, Section 2. Same parties have abandoned No. 1 J. F. Driver, Section 7, Jackson Township, same county.

The Recovery Oil & Gas Co. is drilling on the J. S. H. Burch farm, SW, Section 17, Butler Township, Mercer County.

In the Tiffin Field, of Seneca County, McPherson and others are drilling on the Samuel Hill, Section 1, Liberty Township. W. J. Poyser and others are drilling No. 3 Ida M. Rosenberger, Section 31, Pleasants Township. J. H. Murphy & Sons are drilling No. 1 S. Wolf farm, Section 1, Hopewell Township, and C. L. Williams is drilling on the P. S. Stuckey, Section 32, Bloom Township.

T. F. Lewis and others are drilling No. 3 Carl Blossey, Section 19, Harris Township, Ottawa County.

CENTRAL OHIO

Twenty-three completions were reported from the Central Ohio Field, 7 producers with an initial production of 371 bbls., 3 dry holes and 13 gas wells. In new work starting there were 23 new locations staked out and 14 new wells started spudding, a total of 37, which is looked upon as very encouraging in the face of the extreme weather conditions that have prevailed over the Central West. The large gas companies have the bulk of the work, although a great number are also looking for oil.

Ashland County, one of the actively developed counties in the field, failed to report a completion, but started its share of the new work. In Jackson Township, the Ohio Fuel Gas Co. made a location on the Sadie Stephenson farm, Section 11. Same company set a stake for No. 2-5,015 on the G. W. Guthrie, Section 10, Greene Township, and is also drilling No. 1-4,986 on the G. E. Kauffman, Section 21, Orange Township. Same company made a location on the C. B. Heifner farm, in Lots 44 and 45, Sullivan Township, same county. The Kemrow Co. is drilling No. 5 George W. Garst farm, Section 16, Mohican Township.

In Medina County, Barnhart and others made a location on the W. A. and A. J. White farm, Section 26, Lafayette Township, and the Ohio Fuel Gas Co. staked a location on the W. W. Kindig farm, Section 19, Harrisville Township.

In Lorain County, Carlisle Township, the Ohio Fuel Gas Co. has a fair gas well in No. 1-4,943 on the F. W. Bruce farm, Lot 14, and made a location on the Gezo Szabo farm, Lot 14, same township. The Daugherty Co. made an excellent gas strike on the W. T. McGuire farm, Lot 13, same township, from 2,288 to 2,300 feet.

In Holmes County, the Ohio Fuel Gas Co. made a location on the Debora Campbell farm, Lot 8, Ripley Township.

Ashtabula County

In Ashtabula County, Connneaut Township, Schaffer Bros.' No. 1 Harry L. White farm, Lot 48, brought in a nice gas well from a depth of 2,729 feet. Four other wells are reported under way in the same county, but scattered over four townships, which will give a very good test of the territory.

In Richland County, Monroe Township, the Ohio Fuel Gas Co. is drilling No. 1-4,944 on the Millie Oakes farm, Section 26.

In Coshocton County, Monroe Township, the Ohio Fuel Gas Co.'s No. 1-4,919 on the Carpenter-Conkle-Wagers land, Sections 8, 12 and 13, produced an initial of 16 bbls. from 3,443-61 feet.

In Summitt County, Franklin Township, the Rickenville Oil & Gas Co. drilled a duster on the R. M. McCaughy farm, Section 13. No showing was found in the upper Clinton formation from 3,998 to 4,006 feet, nor in the lower Clinton from 4,013 to 4,126 feet. F. A. Brendall and others brought in a test on the Bernard Kunz farm, Section 23, same township, for an excellent gas producer from a depth of 4,105-26 feet, also a good gas well in a second test on the John Steigner, Section 24, from 4,029-47 feet. Eagon and others made a location for No. 3 on the Samuel Harring farm, Section 17, Greene Township, and Kime and others are drilling a wildcat on the Charles Shaw heirs farm, Section 4, Coventry Township, same county.

In Licking County, the Hope Construction & Refining Co.'s No. 5 on the Charles O. Bannon farm, Section 16, Hanover Township, is reported good for 100 bbls., from 2,860-2,902 feet.

Muskingum County

In Muskingum County, Falls Township, the Ohio Fuel Gas Co. has a fair gas well in No. 1-4,937 on the J. C. Moore farm, from 3,653-94 feet. Ohio Fuel Gas Co. is drilling No. 1-4,966 on the F. L. Varner farm, Section 5, Hopewell Township. Craig, Adair and others brought in an initial producer for 135 bbls. on the Chester Cannon farm, Section 3, Clay Township, from 3,460-3,503 feet. Hope Construction & Refining Co. is drilling on the B. O. Horton farm, Section 6, Jackson Township, same county. In Perry Township, Dr. G. C. Taylor's second test on the Fred, Ella and Mary Smitley farm, Section 15, is an average gas well in the Clinton lime from 4,208-65 feet. Wittmer Properties Trustee, drilled a test on the Irvin Nelson farm, in the third quarter. same township, good for 8 bbls., the oil being found at 4,015 feet. Clinton formation was found from 3,996-4,035 feet, total depth 4,118 feet. Same parties have a very light showing of oil in the Clinton from 4,169-78 feet, total depth of hole 4,203 feet, on the I. B. Baker farm, Section 11, Perry Township. The Atha Co. is drilling a second test on the Nellie V. H. Moorehead farm, Section 3, Wayne Township, same county. Fritz Oil & Gas Co. is starting a test on the Harry T. Swingle farm, Section 28, Bush Creek Township, same county.

In Athens County, the Ohio Fuel Gas Co. has a good gas well in No. 2 Guy M. Kasler farm, Section 33, Berne Township, in the lower Berea sand from 1,502-21 feet, total depth 1,531 feet. Same company is drilling No. 1-4,970 and No. 2-5,008 on the H. H. Henry farm, Sections 33-34, same township. Same company made a location for No. 2-5,009 on the T. N. Hoover farm, Sections 1-2, Waterloo Township, same county, also made a location for No. 3-5,014 on the F. J. Beasley farm, Section 16, Ames Township. Same company made a location for No. 2-5,004 on the F. I. Caldwell farm, Sections 3-4, Carthage Township. Townsend Oil & Gas Co.'s No. 8 Sarah E. Penrod farm, Section 31, Alexander Township, same county, pumped 2 bbls. initial at 1,194 feet. Coolville Oil & Gas Co. failed to find any production in the Salt sand and was drilling in the Maxon sand at 1,050 feet, according to last reports.

In Meigs County, Rutland Township, T. Chase and others have a light gas well in a second test on the Florence Mutchler farm, Section 9, in the Macksburg sand from 685 to 738 feet. Linkous and others have a light gas well on the O. M. Stansbury farm, Section 20, in the Maxon sand from 741 to 743 feet, and are drilling on the A. L. Egner farm, same section. In Salisbury Township, Cochran and others have a hole full of water in a second test on the Roy C. Stansbury farm, Section 29, in the lower Berea sand from 1,776-96 feet, and will be abandoned. H. McTaggert and others are drilling No. 7 on the F. C. Halliday farm, Section 13, Scipo Township, same county.

Jackson County

In Jackson County, Lick Township, the Ohio Fuel Gas Co. is drilling No. 1-4,990 on the Eliza Brown farm, Lot 91, and made a location for No. 1-5,010 on the Thomas Lonberger farm, Lot 14, same township.

In Vinton County, the Wittmer Oil & Gas Properties made locations for Nos. 3 and 4 Thomas Herrold farms, Sections 33 and 34, Swan Township. H. C. Farmer is starting No. 5 on the J. W. Stanley farm, Section 4, Knox Township.

In Lawrence County, the Ohio Fuel Gas Co.'s No. 1-4,892 on the D. W. Rucker farm, Section 29, Symmes Township, indicates a light gas well from 3,038-3,131 feet. Same company made a location for No. 1-5,003 on the G. C. Bowman farm, Section 4, Fayette Township, also a location for No. 1-5,005 on the John C. Clay farm, Section 28-33, Perry Township, same county. Inland Gas Co. also made a location for No. 7 on the Hecla Iron & Mining Co.'s land, Section 23, same township.

In Tuscarawas County, Oxford Township, the Ohio Fuel Gas Co. got a fairly good gas well in No. 1-4,912 on the J. C. Davis, Section 21, finding two gas pockets, the first from 3,473-74 feet and the second from 3,476-78 feet. Gordon Oil Co. is drilling on the Dolly Huffman farm, Lot 35, Washington Township, same county.

In Stark County, Lawrence Township, Johnson and others made a location on the Lewis Sick farm, Section 2. Clinton Oil & Gas Co. abandoned its No. 1 loca-

(Continued on Page 166)

LARGEST GAS WELL EVER COMPLETED IN WESTERN SECTION OF KENTUCKY

By Whit
Staff Correspondent, Kentucky-Tennessee

OWENSBORO, Ky., Feb. 3.—Very little is doing in a drilling way in any part of Kentucky at this time as the 60-day shutdown is still in vogue and will continue on until February 15, when great activity will again prevail. Only a well now and then is brought in anywhere in the Owensboro Field unless they are offsets that must be drilled to conform with the leases. Operators are picking up a lease or so at times and only waiting for the expiration of the shutdown date. Little could be accomplished in the fields owing to the extreme cold weather and inability to get over the hills and hollows in this part of the state.

One of the most important finds for a long time and one that attracts wide attention is the bringing in of a monster gas well by the Benedum-Trees interests, on the W. E. Drake Estate, approximately 10 miles southwest of Greenville, in Muhlenberg County, with an estimated volume from 6,000,000 to 10,000,000 feet, said to be the largest producer found in the western portion of the state. The well has been capped, and arrangements probably will be made soon to use the big gas flow commercially. The bringing in of this gas gusher has extended the Greenville Field considerably, and more than that, the well is located on the south side of the main fault, a section which has received very little attention up to the present. The gas well is near the center of a leased block of 3,500 acres. E. R. B. Martin, of Tulsa, representing the Pennsylvania interests, and B. B. Rhodes, of Owensboro, both interested in the well, are in charge of the production end in the Muhlenberg County area. The gas sand was found at 863 feet and the sand was penetrated by the drill but 3 feet when the well started its heavy flow. One of the interesting features of the well was the character of the log. Many evidences of prehistoric fossils were found in the lower depths and the sand found was almost pearly, it was so bright and clean. Operators who have looked at the sand are of the belief that an oil deposit will be found in the immediate vicinity. Much leasing has been done in that part of Muhlenberg County, and it makes the territory south of the fault look more inviting than ever, and when the weather moderates there should be quite an active drilling campaign on both sides of the fault.

Completed Wells

In the Utica Pool, of Daviess County, Evans & Garrison's No. 1 on the J. C. Malone farm, is rated good for 30 bbls. initial. The Petroleum Exploration Co.'s second test on the J. M. Clark farm, in the same pool, is reported making a showing for around 100 bbls. initial.

Ellis, Young and Rowe's No. 3 on the Rice Brothers-Woodson farm, in the Greenville Field of Muhlenberg County, had such a light showing at 1,752 feet it was termed a dry hole.

(Continued on Page 112)

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Southwest Pennsylvania Has Surprise

First Time in a Year That Field Has Produced Better than Light Pumper. Good for 30 Bbls. a Day

By D. S. Wakenight
Staff Correspondent, Eastern Fields

PITTSBURGH, Pa., Feb. 3.—Fewer completions and less new production was the result of development work in the Eastern fields during the week. Drilling down old wells is still a feature in many districts in West Virginia. In a few instances this has proven satisfactory; moreover, it is cheaper than drilling. The week was not fruitful of many large producers. In the NW of Section 4, Harrison Township, Perry County, Westbrook Brothers and others completed and shot in the Clinton sand a test on the Boyd-Yocum farm. It produced 100 bbls. the first 24 hours.

For the first time in almost a year the Southwest Pennsylvania fields completed better than a light pumper. In old territory, in Robinson Township, Allegheny County, the South Penn Oil Co. completed in the Gordon sand No. 5 on the P. and K. Hetrie farm. It is good for 30 bbls. a day. The location is only 500 feet west of production.

SOUTHEAST OHIO

The deep sand territory in Southeast Ohio came to the front with a few fair producers. In Section 7, Hanover Township, Licking County, the Pure Oil Co. completed and shot in the Clinton sand a test on the Lavertie Earhart farm. It produced 90 bbls. the first 24 hours. In the SE of Section 2, Washington Township, Hocking County, the Preston Oil Co. completed and shot in the same formation No. 3 on the John Liff farm. It produced 85 bbls. the first 24 hours. In the NW of Section 12, Monroe Township, Coshocton County, the Ohio Fuel Gas Co. completed and shot a test on the Carpenter-Conkle-Wagers farm. It is a 75-bbl. producer in the Clinton sand.

In Section 9, Jackson Township, Knox County, the Pure Oil Co. had a duster in the Clinton sand on the J. L. Crider farm. In Section 39, Sutton Township, Meigs County, M. L. Barneby completed in the Berea grit No. 9 on the Wesley Genheimer farm. It is a 4-bbl. pumper.

In Section 9, Bethel Township, Monroe County, C. Berg has a duster at No. 5 on the Freeock Neib farm. In Franklin district, the Preston Oil Co.'s test on the A. V. Carpenter farm is a gasser. In the same township, the Southern Oil Co. has a 5-bbl. pumper in the Squaw sand at No. 9 on the John Winland farm. In Washington district, S. A. Cobbs Co. is due in the sand on the Thomas Nally farm. In Summit Township, the J. A. Colsburg Oil & Gas Co. has a gasser on the Etta Baker farm.

WEST VIRGINIA

The gas companies are still active in a number of districts in West Virginia. Operations in Wayne and Mingo Counties are increasing. In Lincoln district, Wayne County, the Wayne United Fuel Co. has the rig completed for No. 18 on the A. W. Wilson farm, 2,000 feet southwest of the Red Jacket Oil & Gas Co.'s No. 3 on the Consolidated Coal & Coke Co.'s property in Harvey district, Mingo County. In Curtis district, Roane County, the Reedy Oil Co. has started to drill another test on the L. M. Riddle farm. In McClellan district, Doddridge County, the Skeleton Oil & Gas Co. is due in the Gordon sand on the A. M. F. Lyons farm. In the same district the Little Five Oil Co. has a rig up on the Isaac Riffee farm. In Ten Mile district, Harrison County, J. W. Johnson & Moses are drilling at 2,976 feet on the A. W. P. Flannigan farm. In the same district, J. R. Dennison & Co. are due in the Gordon sand at a second test on the Allen Varner heirs' farm. In Coal district the Washington Gas Co. has drilled to a depth of 2,374 feet on the E. D. Fittro farm and shut down.

In Collins Settlement, Lewis County, J. W. Wilson & Co. have completed a test on the Exchange National Bank's property. It is dry in the Dunkard sand and has been abandoned. In Liberty district, Marshall County, the Manufacturers Light & Heat Co. completed in the Big Injun sand No. 3396 on the Wiley Evans farm.

In Eagle district, Harrison County, the Delaware Gas Co. completed a gasser in the Big Injun sand on the John A. Davis farm. In Paw Paw district, Marion County, the Owens Bottle & Machine Co. has a gasser in the Gantz sand on the L. E. and A. Michael farm.

Calhoun County

On Barn Run, Lee district, Calhoun County, the Southern Gas Co. has a rig completed and started to drill on the John Steder farm. This location is 1½ miles in advance of production. In Center district, L. P. Bickel has started to drill on the Stump heirs' farm. In Lee district, the United Fuel Gas Co. has the rig completed on the Carr Shafer farm, 2 miles in advance of production.

In Duval district, Lincoln County, the Cameron Oil & Gas Co. is rigging up on the Horse Creek Land & Mining Co.'s tract. In Carroll district the Allegheny Gas Corp. has started to drill on the N. H. Reynolds farm. In McComas district, Cabell County, the Hamilton Gas Co. has started to drill on the W. W. Hutchinson farm and has made a location on the Richard McComas farm. In Scott district, Boone County, the United Fuel Gas Co. is rigging up on the A. A. Strollonge farm.

Tyler County

In Meade district, Tyler County, the American Oil Co. completed No. 3 on the John McCoy farm. It is a gasser. No. 4 on the same farm is drilling. In McComas district, Cabell County, the Hamilton Gas Co. has a gasser at No. 5 on the H. C. Beckett farm. In Curry district, Putnam County, J. V. Reishman has a gasser at a second test on the William Grass farm.

In Union district, Lincoln County, the Woodall Gas Co.'s test on the Caloway Plumley farm is a gasser. In Carroll district, A. F. Morris, trustee, has a gasser on the Virgie Houldren farm. In Jefferson district, the United Fuel Gas Co. has a gasser at No. 3908 on the A. I. Dotson farm. In Sheridan district, the Empire State Gas Co. has a gasser at No. 14 on the C. R. Sweetland farm.

In Sheridan district, Calhoun County, the Richter Oil Co. completed No. 3 on the Elmer Haught heirs farm. It is a 10-bbl. pumper. In Murphy district, Ritchie County, E. E. Pope has a 10-bbl. pumper at No. 7 on the H. S. and R. Wilson farm. In Burning Springs district, Wirt County, R. C. Wagner and others have rig up on the Newton Kemp farm. In Clay district, Wirt County, Hays & Keeman are drilling in the sand at No. 16 on the George S. Lemon farm.

In Grant district, Ritchie County, J. W. McGinnis & Co. have a gasser at No. 8 on the United States Oil Co.'s lease. In the same district, R. B. Roberts & Co. have a 10-bbl. pumper on the H. B. Perrine farm. In the same district, the Warrior Petroleum Co.'s test on the H. E. McGinnis farm is a duster. In Murphy district, Joseph E. Leach has a duster on the Darling farm.

Clay County Producer

The South Penn Oil Co.'s No. 7 on the James Phillips farm, in Henry district, Clay County, is a 20-bbl. producer. In the same district the Virginian Gasoline & Oil Co. has a 12-bbl. pumper at No. 20 on the Brown, Swan, Goshorn & Geary tract. The same company is drilling on the J. and L. J. Reed farm. In Union district, D. H. Stephenson has a very light pumper at No. 5 on the K. S. Harshberger farm.

In Walker district, Wood County, L. B. Galbraith and others have a light pumper on the B. M. Foley farm. In the same district, G. C. Alleman & Co. are drilling a second test on the Thomas Heckert farm. In Washington district, Pleasants County, Tait Brothers & Co. have a light pumper at No. 29 on the E. N. Cook farm and a light pumper at No. 29 on the D. M. Dye farm.

In Big Sandy district, Kanawha County, the United Fuel Gas Co. has a gasser at No. 4,019 on the Brown, Swan & Goshorn farm, and a gasser at No. 4,021 on the Eliza Bodkin farm.

In Union district, Ritchie County, the Carnegie Natural Gas Co. completed in the Berea grit a duster on the G. R. Vincent farm. In Clay district, Wetzel County, the Philadelphia Oil Co.'s No. 5 on the J. R. Peytit & Co.'s farm is dry in all sands. In Church district, S. S. Main has a 25-bbl. producer in the Gordon sand at a second test on the Manufacturers Light & Heat Co.'s property.

Boone County

In Sherman district, Boone County, the Pure Oil Co. completed in the Berea grit No. 38 on the Federal Coal Co.'s property. It is a 10-bbl. pumper. In the same district, the same company has completed No. 32 on the Lafollette, Robinson & Prichard tract B and has a fair gasser. In the same district, the same company's No. 43 on the Federal Coal Co.'s tract is a light gasser. In the same district, Godfrey L. Cabot has a fair gasser on the Federal Coal Co.'s property. In Elk district, Kanawha County, the United Fuel Gas Co. completed a gasser at No. 3,965 on the Numa Black Coal Co.'s farm.

In McClelland district, Doddridge County, A. C. Garner & Co. completed a 5-bbl. pumper in the Fifth sand on the S. H. Garner farm. In Central district, the Philadelphia Oil Co. has a 10-bbl. pumper on the J. C. Smith & Co. farm.

In Henry district, Clay County, the Virginian Gasoline & Oil Co. completed in the Big Injun sand No. 3 on the H. C. and L. J. Reed farm. It is a gasser estimated good for 500,000 feet of gas and showing a little oil. The location is 500 feet west of the company's second test on the M. E. Reed farm.

Harrison County

In Clark district, Harrison County, Nathan Goff, Jr., has a Fifth sand gasser at No. 14 on the Nathan Goff farm. In Clay district, Monongalia County, the South Penn Oil Co.'s No. 3 on the S. A. Petty farm is a very light pumper in the Bayard sand. In the same district, the Chartiers Oil Co. is due in the Big Injun sand at a second test on the Wilson farm.

In Cameron district, Marshall County, the Manufacturers Light & Heat Co. completed gassers on the Della Huffner, H. F. Phillipi and D. W. McConaughey farms. In New Milton district, Doddridge County, Trainer Brothers have a duster on the Granville Willis farm. In Murphy district, Ritchie County, Rexroad & Co. have a very light pumper in the Big Injun sand on the J. W. P. Cain farm.

Drilling Deeper

The Hope Natural Gas Co. is drilling down from the Fifth to the Speechley sand an old well on the M. A. Nusbaum lot, in Clarksburg, Coal district, Harrison County. In Ten Mile district, Harrison County, the Reserve Gas Co. has the rig completed for a second test on the Stephen L. Pitts farm. It will be drilled to the Speechley sand. In the same township, the same company is drilling its second test on the T. T. Thompson farm from the Fifth to the Speechley sand. In Turkey Run, Grant district, Mingo County, the Wayne United Gas Co. has the rig completed for No. 4 on the A. W. Wilson farm. In Lincoln district, Wayne County, the United Fuel Gas Co. completed a rig on the A. W. Wilson farm.

On the north fork of Hughes River, Grant district, Ritchie County, B. C. Deem & Co. completed No. 4 on the Hall heirs farm. It is a gasser in the Maxon sand. In Center district, Calhoun County, Snodgrass Brothers completed in the Big Injun sand a light gasser on the Ida B. Jeffries farm.

In Lee district, Calhoun County, W. P. Bickel completed in the Big Injun sand a test on the I. R. Bryner farm. It has been shot and is a light gasser showing a little oil.

Monongalia County

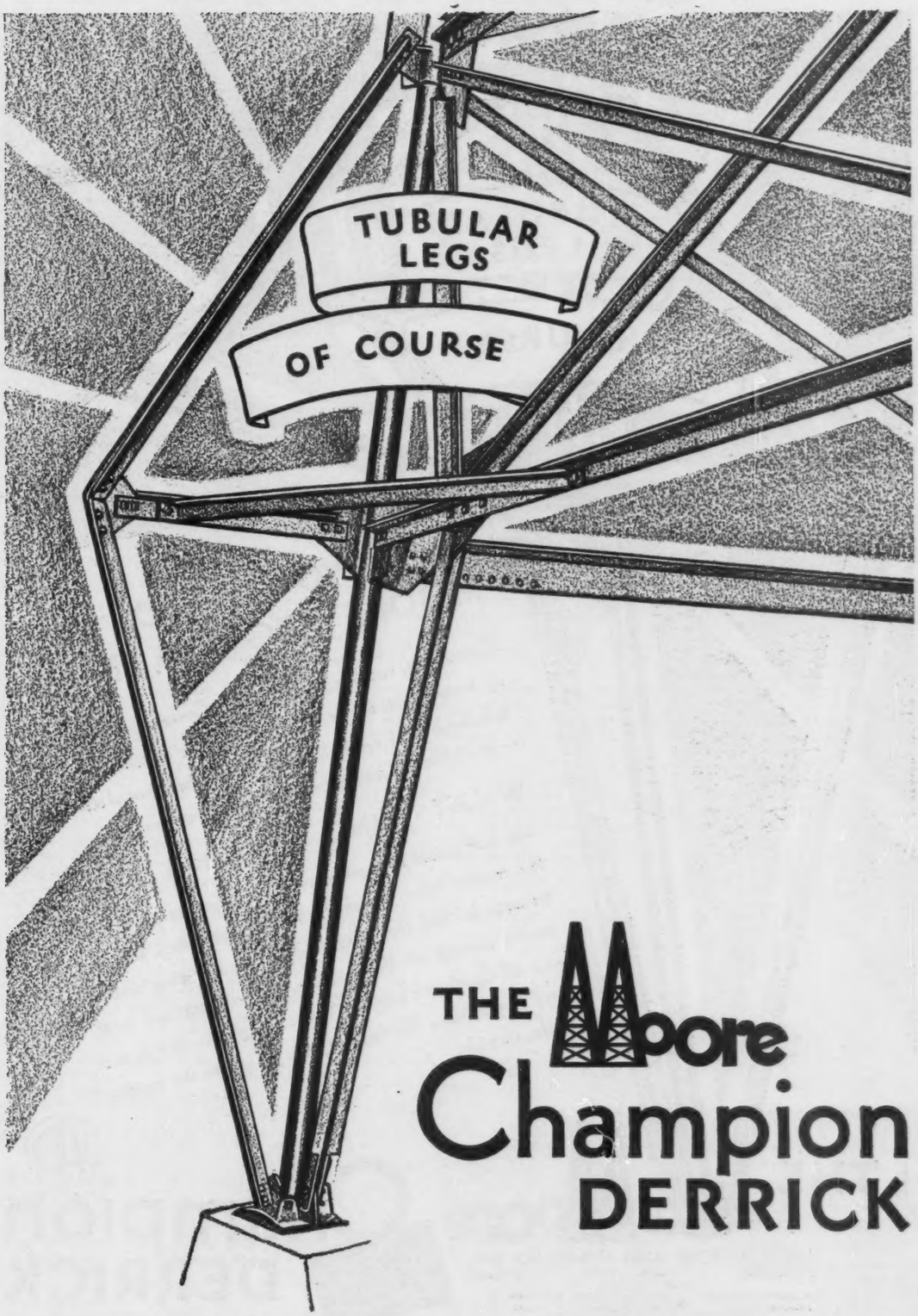
In Clay district, Monongalia County, the Chartiers Oil Co. has shut down for casing on the Louis R. Hess farm. In the same district, the Philadelphia Gas Co. has made a location on the J. J. Moore farm. In Battelle district, the Hope Gas Co. is drilling on the Henry Haught and Elias Fox farms. In Church district, Wetzel County, the Pittsburgh & West Virginia Gas Co. is rigging up on the Caroline Hibbs farm. In the same district, D. W. Null and others have the road completed to a location on the Ashcraft heirs farm. In the same district, Cochran & Cochran are building a rig on the E. J. Hoge farm. In Chapmanville district, Logan County, the Big Creek Gas Co. is building a rig on the Lydia M. Bevins farm. In Grant district, Cabell County, the Hamilton Gas Co. has a rig up on the Lafayette Knight farm. In Washington district, Boone County, the Riverhead Gas Co. has made a location on the William R. Nelson farm. On the right fork of Little Flint creek, Grant district, Doddridge County, the Hope Construction & Refining Co. has the rig completed for a second test on the L. R. Spencer farm.

SOUTHWEST PENNSYLVANIA

In West Deer Township, Allegheny County, H. H. Huff has completed in the third sand a test on the C. F. Setzepfantd farm. It is a 2-bbl. pumper. It is 1,500 feet northeast of the test on the Fred Backhouse farm. In the same township, Jacob Morris & Co. completed No. 3 on the Rose Patton showing for a 3-bbl. pumper. In Dunkard Township, Greene County, the Greensburg Gas Co. has started to drill on the Imri Smith farm. In Springhill Township, the Peoples Natural Gas Co.'s test on the Patrick Taylor farm is dry in the Bayard sand. It has been abandoned.

The local fields presented a surprise when the South Penn Oil Co. completed and shot in the Gordon sand No. 5 on the P. and K. Hetrie farm, in Robinson Township, Allegheny County. It is a producer good for 30 bbls. a day. This well is in old territory that was developed many years ago.

In Greene Township, Greene County, Jesse L. Garard completed No. 24 on the C. Gregg farm. It is a very light pumper in the Dunkard sand. In Morris Township, the Natural Gas Co. of West Virginia has a duster at No. 3 on the J. B. Powers farm. In Washington Township, A. C. Sprecht & Co. have a gasser in the gas sand on the Jacob Johns farm.



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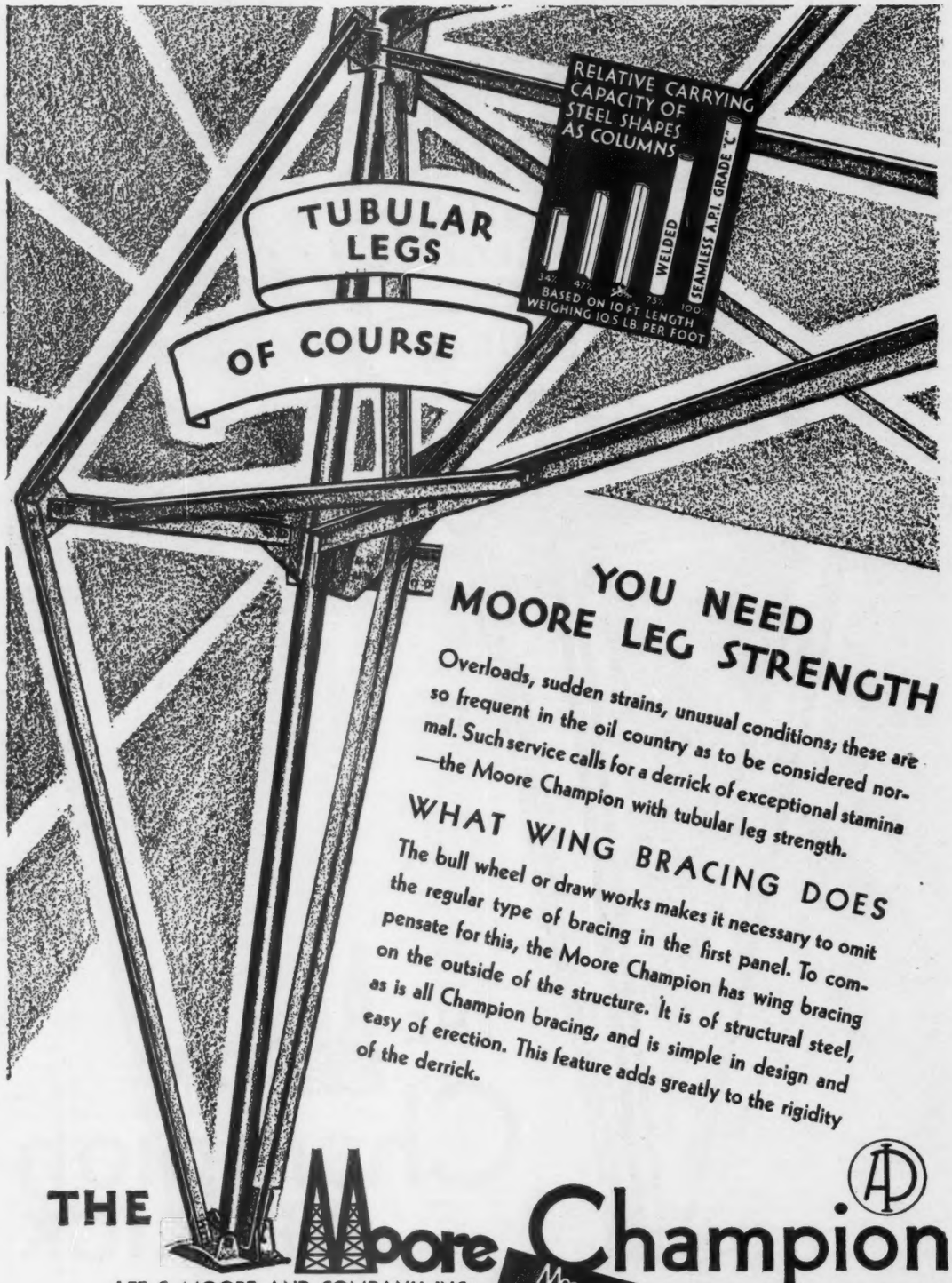

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New Wells in Penn and World Pools

Good Producer in Ector County and Glasscock County Well Has 1,100 Feet of Oil in Hole. Three Prospects in Grand Falls

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Feb. 3.—Another well in the World Pool, Glasscock County, a good well by the Cosden Oil Co. in the Penn Pool, Ector County, three more possible producers in the Grand Falls Pool, Ward County, and two more shallow wells in the Toborg Pool, northwest of the Yates Field in Pecos County, distributed interest quite evenly in the Permian Basin during the past week.

West Texas will no doubt come in for its portion of further curtailment, and more production to be lopped off in the several large pools which are now under proration, principally the Yates Pool, Pecos County, Winkler County pools, and the Howard-Glasscock County pools and the Crane County fields may also be restrained to some degree, due to the oil producers of Texas sanctioning such curtailment of the State's potential output. A meeting of the central committee of the Texas division of the Mid-Continent Oil and Gas Association, which was appointed to study oil production in the State and possible methods of curtailing it still more, will be held in Fort Worth February 6, at which time proration advisory committees of West Texas, along with committees from other parts of the State, will meet to discuss this matter. The Yates Pool advisory committee meets in Fort Worth February 5 and may possibly decide to cut production of that pool, preparing the pool for admittance under the new plans which it is hoped to work out.

Howard-Glasscock

The Howard-Glasscock Pools are now running at about a minimum, or to the refiners and purchasers' demands, consequently pools of those two counties may not be lowered to an appreciable extent, and as the Winkler County Pool's figures show a gradual decline in production it is believed it cannot very well be curtailed further. The potential for the period from February 1 to February 15 is 151,355 bbls. daily from 564 wells and 276 units, whereas the previous two weeks' period showed a potential of 151,374 bbls. from 562 wells and 275 units, showing the decline in production. The daily allowance is 150,047 bbls. for the new period, practically the full potential of the pool.

The Howard-Glasscock County daily potential is 58,769 bbls., but the pipe line companies serving those pools have elected to take only 27,500 bbls. daily for the month of February, thereby cutting down the production of that area by more than half, and it is difficult to see just how this area may be cut to a lower daily average. The advisory committee and proration umpire of the pool are studying the situation at the present time and will meet with the central committee.

It hardly seems possible that the Yates Pool, Pecos County, can be subjected to a lower allowance in daily production, for at present it is running around 134,000 bbls. while the potential is approximately 5,000,000 bbls. per day, but the advisory committee of that pool will discuss the situation and the possibilities of further curtailment.

One example of decline in production in Winkler County is Southern Crude Oil Purchasing Co.'s No. 1-88-B Hendricks in Section 4, Block B-12. This well was flowing 7,000 bbls. per day when the field was put on proration in May, 1927, and just recently on a 12-hour test made only 65 bbls. of net oil.

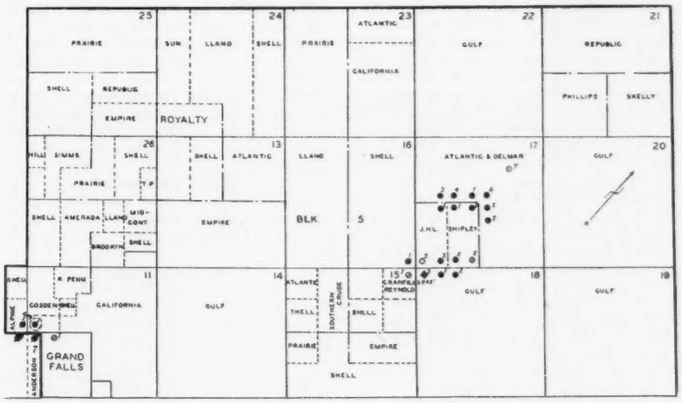
Good Well in Penn Pool

The Penn Pool of Ector County again received a nice well this week when the Cosden Oil Co.'s No. 1-B University, in the SE cor. of the NE of Section 2, Block 35, came in for an initial production of 975 bbls. in 22½ hours, being pinched 12 hours of this time. Top of the pay of this fourth well of the pool was encountered at 3,586 feet and the well bottomed at 3,635 feet, after an increase was discovered from 3,616-26 feet. Elevation of the well is 2,890 feet, top of the salt was found at 1,095, and the first showing of oil came at 3,568 feet with 500,000 feet of gas.

Landreth Production Co.'s No. 1-T University in the NE of Section 3, Block 35, in the Penn Pool, will be completed as a gas well if the rock pressure is sufficient, and the well can be shut in. Gas in this test was encountered at 3,135-38 feet, an estimated 18,000,000 feet which blew the tools up the hole and created a bad fishing job, which has finally brought a decision to make a gasser out of the well, the gas to be used in the field for drilling purposes. The derrick will be moved to a new location 330 feet from the south and east lines of the section, and a new test started. Total depth of the gasser is 3,175 feet; elevation is 2,871 feet.

The Humble Oil & Refining Co. is building rigs on the three locations reported last week. They are on offset locations to Landreth and Cosden's wells.

Although there are not many wells drilling in this pool, and but four already completed it looks as if the pool was certain of assuming major proportions. The Landreth Production Co.'s well completed last week for 840 bbls. initial and Cosden's well of this week of better than 1,000 bbls. give much assurance to those interested in this pool. As yet there is no adequate pipe line outlet for the wells being completed, and storage is the only present method used in handling the production.



Plat showing location of the Shipley Pool, Ward County, and Alpine Oil Co.'s No. 1 Boogher, in Section 11, the opener of a separate and distinct pool. Two offsets to the discovery are now promising more production for this area.

Grand Falls Pool

Three miles south of the Shipley Pool, Ward County, the new Grand Falls Pool is assuming prospects of a small producing area, comprised of small producing wells. The discovery well of this area is making only 30 bbls. per day on the pump, but three offsets are now appearing as prospective wells. The Alpine Oil Co. made the discovery in Section 11, Block 5, and has an offset to the south on the Dakan farm that is averaging 30 bbls. per day while swabbing and cleaning out after a 90-quart shot from 2,125-85 feet. Top of the pay of this offset well is 2,148 feet and total depth is 2,210 feet. Nothing sure will be known about the test until it is cleaned out to the bottom and a test made, but it now appears as a producer for at least as much as the discovery well is making.

E. J. Anderson and others' No. 1 Townsite, an east offset to the Alpine Oil Co.'s No. 1 Boogher, the discovery well of this pool, is also showing up as a possible producer. It topped a pay sand at 2,155 feet and was bottomed at 2,183 feet, receiving a 70-quart shot from 2,153-83 feet. It is now being cleaned out 20 feet off bottom, and flows 10 bbls. per day while cleaning out. This well is in the NW cor., Section 7, Block 32, H.&T.C. Survey.

The third possible new producer is Fugler and others' No. 1 Townsite, 185 feet southeast and 500 feet northeast of the north corner of Section 7, Block 32, H.&T.C. Survey, but in Section 11, Block 5. Top of the pay of this test was found in sand at 2,151 feet and the well drilled only 8 feet in the pay. It is now cleaning out 20 feet off bottom with 1,200 feet of oil in the hole and an estimated 250,000 feet of gas. These three wells will probably be completed during the following week, adding another producing area to the spotted producing pools of Ward County.

WEST TEXAS PRODUCTION

Week Ending February 1

County—	Wells	Bbls.
Crane County	326	36,510
Crockett County	46	1,520
Fisher County	7	1,412
Ector County	6	1,430
Garza County	5	50
Glasscock and Howard	470	38,250
Jones County	73	2,275
Loving County	18	1,320
Mitchell County	143	3,122
Pecos County	402	141,367
Reagan County	253	16,415
Runnels County	3	21
Scurry County	5	22
Upton County	248	8,285
Ward County	20	1,650
Winkler County	606	87,905
Total production this week	2,631	340,554
Total production last week	2,626	338,922
Difference	5	1,632

World Pool Well

The World Oil Co. is completing its second well in its pool in northern Glasscock County, in Section 21, Block 34, Township 2s, T.&P. Survey. This well topped the pay 10 days ago at 2,435-42 feet and started filling the hole with oil. It now stands at the total depth of 2,453 feet with 1,100 feet of fluid in the hole, of which practically all is oil. Ten-inch casing is being pulled, to allow for putting the well on pump. No estimate as to its possibile daily potential has been made, but it practically promises the second well for this first individual pool of the county. Exact location of the well is 1,650 feet from the north and 2,310 feet from the west lines of Section

(Continued on Page 142)

WILDCAT OPERATIONS IN WEST TEXAS

Week Ended February 3

Company, farm and location—	Remarks—
ANDREWS COUNTY	
Deep Rock Oil Co. et al's No. 1 Mathis, 990 ft. from S and W. Sec. 4, Blk. A-46, Public School Land	Location.
Deep Rock's No. 1 Ogden, 2,310 ft. E. 330 ft. S. Sec. 6, Blk. A-46, Public School Land	Top pay 4,345 ft.; top lime 4,054 ft.; averaging 200 bbls. per day; total depth 4,428 ft.; ent. 200 ft. water in hole 4,414-28 ft.
Deep Rock Oil Co. et al's No. 1 King, 330 ft. from N and 2,310 ft. from E. Sec. 11, School Blk. A-46	Moving in material.
BORDEN COUNTY	
Moncrief et al's No. 1 Munger, 1,980 ft. from N and E. Sec. 15, Blk. 31, Twp. 4-N. T.&P.R.R. Sur.	Set 6-⅝n. casing; drlg. 2,686 ft.; carrying hole full water.
Teas & Wheeler's No. 1 Long, 1,320 ft. N and E of Sec. 27, Blk. 30, T.&P. Sur.	Top salt 1,080 ft.; shut down 2,540 ft.
BREWSTER COUNTY	
E. W. Bateman et al's No. 2 Nevill, 2,000 ft. S and W line of Sec. 62, Blk. 13, G.H.&S.A.R.R. Sur.	Shut down 2,612 ft.
Brewster Oil Co's No. 1 Fee, 2,640 ft. S and 2,598 ft. E of NW cor., Sec. 45, Blk. G-15, G.C.&S.F. Sur.	Fishing 1,935 ft.
Forrest Oil Co.'s No. 1 Skinner, C SW SE, Sec. 100, Blk. 2, G.C.&S.F. Sur.	Shut down 1,010 ft.
Trans-Pecos O. & G. Co.'s No. 1 Jones, 920 ft. from N and 2,500 ft. from E of Sec. 18, Blk. G-15, G.C.&S.F. R.R. Sur.	Drlg. 1,635.
Van McPhail's No. 1 McIntyre, SE cor., Sec. 59, Blk 352, 7 mi. S of Alpine	Shut down 1,740 ft.
COKE COUNTY	
Lipan Oil Co.'s No. 1 E. C. Rawlings, Sec. 390, Blk. 1-A, H.&T. C. Sur., elev. 2,750 ft.	Shut down 2,892 ft.
Mid-Kansas Oil Co.'s No. 1 W. E. Lackey, 330 ft. N and E of SW cor., Sec. 272, Blk. 1-A, H.&T.C. Sur.	Pay 3,755-56 ft.; fishing 4,255 ft.
CONCHO COUNTY	
Duffy et al's No. 1 Callan, 1,520 ft. N and 1,120 ft. W of SE cor., Sec. 21, Blk. 10, H.&T.C.R.R. Sur.	Spudded and shut down.
Turner et al's No. 1 Borsig, 150 ft. from S of SE cor., G. Emmig Sur. 130, 6 mi. W of Paint Rock	Shut down 735 ft.
CRANE COUNTY	
Church & Field's No. 5 University-Duall, 990 ft. from W. 1,650 ft. from S. Sec. 39, Blk. 30	Shut down 2,724 ft.

(Continued on Page 104)

Semi-Wildcat Producer in Wilbarger

Deepening of Several Wells in Gray County with Mixed Results. George Pool Averaging 1,210 Bbls. from 46 Wells

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Feb. 3.—Deepening of several wells in the Bowers and Saunders Pools in Gray County and a semiwildcat in Wilbarger County marked the main events of the Panhandle and Wichita Falls districts during the week. Bad weather is still deterring activities in these two districts.

The Panhandle Refining Co.'s No. 3 Saunders was completed on October 26, 1929, at a total depth of 2,483 feet, flowing 1,370 bbls. the first 24 hours after a pay topped at 2,480 feet. Eleven million feet of gas came in with the oil, but due to the well falling off in production it was deepened to 2,484 feet and increased in production to 2,050 bbls. per day, averaging this for December, 1929. It has now decreased again to 1,000 bbls. of oil and 600 bbls. of water per day.

The Shamrock Oil & Gas Co. deepened its No. 2 Lincoln-Saunders from 2,492 feet to 2,504 feet, but did not help the well. It was completed on November 2, 1929, for a 1,400-bbl. well after topping the pay at 2,491 feet. Later it was cleaned out and increased to 3,715 bbls. per day with 12,000,000 feet of gas. On January 28, 1930, it was deepened to 2,504 feet and is now flowing 1,500 bbls. of fluid, of which 760 bbls. is oil and 740 bbls. is water.

The Magnolia Petroleum Co. deepened its No. 1 Bowers on August 11, 1929, to 3,129 feet, but brought no increase after topping a second pay at 3,117 feet. It made an initial production of only 130 bbls. after deepening. It was formerly completed April 28, 1928, at a total depth of 3,040 feet after topping a pay at 2,853 feet and came in for a 253-bbl. well.

McMan Oil & Gas Co.'s No. 3 Jackson was formerly completed on November 9, 1929, for a 900-bbl. well at total depth of 3,015 feet after topping the pay at 3,006 feet, and was recently deepened to 3,120 feet, but apparently with no increase, but showing 2 bbls. of water per hour at that depth.

Gray County

Deepening of wells in pools of Gray County is the same as in any other area, for some of them are benefited to a great extent while others are drilled into water or do not show any increase. Many of the wells of these pools come in with large initial production but soon slump off from the flush period. However, these large wells have caused the pools to be placed under proration, due to available storage being filled and the pipe lines serving the fields unable to cope with all completed wells. The central committee of the Texas division of the Mid-Continent Oil and Gas Association may work to cut production still further in these pools. A proration committee is now functioning in this area, and this committee will confer with the central committee as to what may possibly be done in handling the overproduction situation. Gray County will undoubtedly be one of the producing areas of Texas to be further curtailed in drilling and production. Present daily average production is 55,000 bbls. Daily average of the Panhandle district for the past week was 87,865 bbls., a decrease of 325 bbls. from last week.

Wichita Falls Area

In the Wichita Falls district the Grayback Development Co. opened an extension to the Rock Crossing Pool by the completion of its No. 1 Bud-Waggoner, 150 feet from the south and west of the W half of SE of SE Section 50, Block 2, H.&T.C. Survey. Oil sand was found in this test at 2,647-76 feet, and the initial production was reported as 200 bbls. This western extension of the pool gives plenty of possibilities to the intervening acreage, and offers more producing acreage to Wilbarger County, another county which has been prorated because of too much production for the available pipe lines serving the areas.

The State Oil Corp.'s No. 1 Ross in the NE of the NE of Section 98, B.B.&C., a semiwildcat in northern Callahan County, topped the lower Tannehill sand at 1,285-90 feet and is flowing an estimated 500,000 feet of gas with a good showing of oil. The company is still trying to shut off the water which is coming from above sand at 1,230-42 feet. As soon as the water is shut off a test will be made to prove the worth of the well which has possibilities of opening up more acreage to production in this part of the county.

Union Oil Co.'s No. 2 Alexander in Section 23, E.T.R.R. Survey, 1½ miles northeast of the above test, had the lower Tannehill sand at 996-1,009 feet and is good for an estimated 35-bbl. well. It is the second well in this area. E. P. Campbell opened the pool by the discovery of its No. 1 Jackson in Section 23, E.T.R.R. Survey.

The Lloyd Pool, 9 miles south of Santa Anna in Coleman County, produced 499 bbls. from 10 wells on January 29, 1930, and the Overall Pool in the same county made 886 bbls. from 18 wells on the same date. The George Pool, the most important pool at the present in Brown County, is averaging around 1,210 bbls. from 46 wells.

WICHITA COMPLETIONS
Week Ending February 1

Archer County

J. F. Bailey's No. 1 Brown had an initial production of 15 bbls. at 1,291 feet and was drilled to a total depth of 1,292 feet. L. T. Burns' No. 1 Harmel had an initial production of 33 bbls. at 1,438-45 feet. R. A. Clampitt's No. 1 Richardson had an initial production of 60 bbls. at 1,367-69 feet. Richard and others' No. 1 Young had an initial production of 12 bbls. at 1,424-30 feet.

Jack County

C. W. Boller's No. 3 Raley had an initial production of 225 bbls. at 3,118-34 feet.

Young County

Fowler and others' No. 1 Hill had an initial production of 30 bbls. at 1,039-40 feet. G. A. Horal's No. 1 Morrison had an initial production of 60 bbls. at 3,840-3,940 feet. Madden & Hunt's No. 3 Kunkel had an initial production of 24 bbls. at 1,119-40 feet. Stump & Heydrick's No. 2 Daniels had an initial production of 47 bbls. at 855-65 feet. Baker & Pardee's No. 2 Donnell had an initial production of 140 bbls. at 3,320-30 feet. E. T. Clark's No. 1 Ribble location was abandoned.

Wilbarger County

Empire Gas & Fuel Co.'s No. 20-A Waggoner had an initial production of 75 bbls. in 18 hours at a depth of 2,264-95 feet.

Wichita County

Arkansas Gas & Fuel Co.'s No. 39 Kemp & Kempner had an initial production of 117 bbls. at 1,764-76½ feet. Morgan & Anderson's No. 19 Goetz was dry and abandoned at 1,083 feet. The Texas Company's No. 373 Waggoner had an initial production of 84 bbls. at 1,560-67 feet. United Producers Co.'s No. 10 Hodges had an initial production of 134 bbls. at 1,748-66½ feet.

TEXAS PANHANDLE
Week Ending February 1

Gray County

Clayton-Key Oil Co.'s No. 1 Key, located 330 feet from south and west of east 42 acres of north 84 acres of south 168 acres, Section 1, B.&B. Survey, topped the pay at 2,664-80 feet and from 2,695-2,700 feet, was drilled to a total depth of 2,774 feet and had an initial production of 45 bbls.

Hutchinson County

Spurlock and others' No. 1 Christian, located 330 feet from east and 440 feet from north, SE SE, Section 33, Block Y, A.&B. Survey, was junked at a total depth of 405 feet.

Wheeler County

Prince & Adams' No. 1 Burcham, located C NW NE, Section 89, Block 17, H.&G.N.R.R. Survey, topped the pay at 1,785-1,910 feet and had an initial production of 18,000,000 feet of gas. Wischkamper and others' No. 2 Johnson, located 300 feet south and west of NE cor. SE, Section 50, Block 17, H.&G.N. R.R. Survey, topped the pay at 1,790 feet, was drilled to a total depth of 1,800 feet and had an initial production of 51,000,000 feet of gas.

NORTH TEXAS PRODUCTION
Week Ending February 1

Panhandle district—	Bbls.
Carson County	8,705
Hutchinson County	23,015
Gray County	54,995
Moore County	595
Potter County	0
Wheeler County	555
Total production this week	87,865
Total production last week	88,190
Decrease	325
Wichita district—	
Archer County	17,810
Baylor County	300
Clay County	965
Cooke County	5,243
Foard County	174
Jack County	4,577
Haskell County	70
Montague County	6,297
Throckmorton County	671
Wilbarger County	25,150
Young County	8,128
Wichita County	25,573
Total production this week	94,958
Total production last week	96,176
Decrease	1,218
Ranger district—	
Brown County	8,866
Callahan County	3,636
Coleman County	5,554
Comanche County	1,155
Palo Pinto County	591
Eastland County	4,876
Shackelford County	9,298
Stephens County	5,476
Total production this week	39,462
Total production last week	40,163
Decrease	701
Grand total production this week	222,285
Grand total production last week	224,529
Decrease	2,244

RANGER COMPLETIONS
Week Ending February 1

Brown County

Arcadia Ref. Co.'s No. 3 Truehart-C was shot with 10 quarts at a depth of 1,132-42 feet and had an initial production of 5 bbls. S. B. Owens' No. 9 Cannon was drilled to a total depth of 1,194 feet and was dry and abandoned. Reynolds Drilling Co.'s No. 1 Heath was drilled to a total depth of 1,630 feet and was dry and abandoned. The Texas Company's No. 2 Martin location was abandoned.

Callahan County

Humble Oil & Refining Co.'s No. 1 Johnson-C was dry and abandoned at 1,162 feet. Kleiner and others' No. 1 Windham was dry and abandoned at a total depth of 1,034 feet. Mook-Texas Co.'s No. 1 Harris was dry and abandoned at a total depth of 1,320 feet.

Coleman County

Elrod, Bebout & Sullivan's No. 6 Haas topped the pay at 1,487 feet, was drilled

(Continued on Page 142)

WILDCAT OPERATIONS IN TEXAS PANHANDLE

Week Ending February 3

CARSON COUNTY

Company, well, farm, name, section and block—	Remarks—
Champlin Ref. Co.'s No. 5 McConnell, 990 ft. S line, 330 ft. W line, N 120 ac. NW, Sec. 67, Blk. 4, I.&G.N. Sur.	Rigged up and S.D.
Danciger O. & R. Co.'s No. 1 Block, 330 ft. N and E lines, Sec. 112, Blk. 4, I.&G.N. Sur.	S.D. 2,985 ft.
Delmar Oil Co.'s No. 5 Noel, 330 ft. S and W, NE cor. W½ SE, Sec. 198, Blk. 3, I.&G.N. Sur.	S.G. 3,000-10 ft; S.D. 3,131 ft.
Empire G. & F. Co.'s No. 1 Fields, 1,650 ft. N and E, lines, Sec. 13, Blk. 7, I.&G.N. Sur.	Drlg. 2,742 ft.
Empire G. & F. Co.'s No. 2 Deahl, 660 ft. N and E, SW, Sec. 3, Blk. 5, B.&B. Sur.	S.D. 3,000 ft.
Empire G. & F. Co.'s No. 1 Thorp, C NW, Sec. 26, Blk. T, A.B.&M. Sur.	Drlg. 2,830 ft.
Gulf Prod. Co.'s No. 1 Burnett-C, C SE SE, Sec. 35, Blk. 4, I.&G.N.R.R. Sur.	Location.
Ham Oil Co.'s No. 1 Cooper, 330 ft. S and W, E½ NE, Sec. 5, Blk. 9, H.&G.N.R.R. Sur.	T.D. 3,105 ft; T.P. 3,102 ft; 1,000 ft. oil in hole.
Herragan Oil Co.'s No. 1-A McConnell, 330 ft. N and W, W½ SW, Sec. 187, Blk. 3, I.&G.N.R.R. Sur.	S.D. 3,230 ft; T.P. 3,225-30 ft; 1. P. 40 bbls.
McClintock et als' No. 2 Garner, 330 ft. W and S of E 55 ac., of N 80 ac., NW, Sec. 105, Blk. 4, I.&G. N.R.R. Sur.	Rig.
McMan O. & G. Co.'s No. 1 McConnell, 330 ft. N and E, E½ SW, Sec. 187, Blk. 3, I.&G.N.R.R. Sur.	T.D. 3,266 ft; T.P. 3,175 ft; swbd. 22 bbls. in 14 hrs.
Osborne et als' No. 3 Percival, 330 ft. N and W, SE cor. E½ NE, Sec. 199, Blk. 3, I.&G.N.R.R. Sur.	Location.
Pansota Oil Co.'s No. 1 Block, 330 ft. S and W, NE cor. SW, Sec. 111, Blk. 4, I.&G.N.R.R. Sur.	Drlg. 2,290 ft.
Prairie O. & G. Co.'s No. 2 Nail, 330 ft. from N and W lines, N½ E½ SE, Sec. 198, Blk. 3, I.&G.N. Sur.	10,000,000 ft. gas 2,830-2,985 ft; S.D. 3,112 ft.
Red River Gas Co.'s No. 3 Lee Bivins-A, C, SE SE, Sec. 43, Blk. M-20, G.&M.R.R. Sur.	S.D. 2,120 ft.
Ryan Cons. Oil Co.'s No. 7 Block, 330 ft. N, 990 ft. W, SE cor. NE, Sec. 111, Blk. 4, I.&G.N.R.R. Sur.	Drlg. 2,680 ft.
Shell Pet. Corp.'s No. 1 Percival, 330 ft. from N and E, SE, Sec. 199, Blk. 3, I.&G.N. Sur.	S.D. 600 ft.
Skelly Oil Co.'s No. 19 Schafer, 330 ft. N, 990 ft. E, SW cor. NE, Sec. 198, Blk. 3, I.&G.N. Sur.	6,000,000 ft. gas 2,895-2,970 ft; S. D. 3,100 ft.
Skelly Oil Co.'s No. 20 Schafer, 330 ft. N, 990 ft. W, SE cor. N½, Sec. 198, Blk. 3, I.&G.N. Sur.	S.D. 3,090 ft.
The Texas Co.'s No. 3 Noel, 330 ft. N and W, SE cor. NW, Sec. 187, Blk. 3, I.&G.N.R.R. Sur.	Drlg. 3,270 ft.
The Texas Co.'s No. 3 Quinn, 330 ft. N, 990 ft. E, SW cor. E½, Sec. 7, Blk. 9, I.&G.N.R.R. Sur.	T.P. 3,020-40 ft; 200 ft. oil in hole; S.D. 3,092 ft.
L. W. Timm's No. 2 Garnet (White Deer), 330 ft. S and W, NE cor., Sec. 104, Blk. 4, I.&G.N.R.R. Sur.	S.D. 1,008 ft.

(Continued on Page 103)

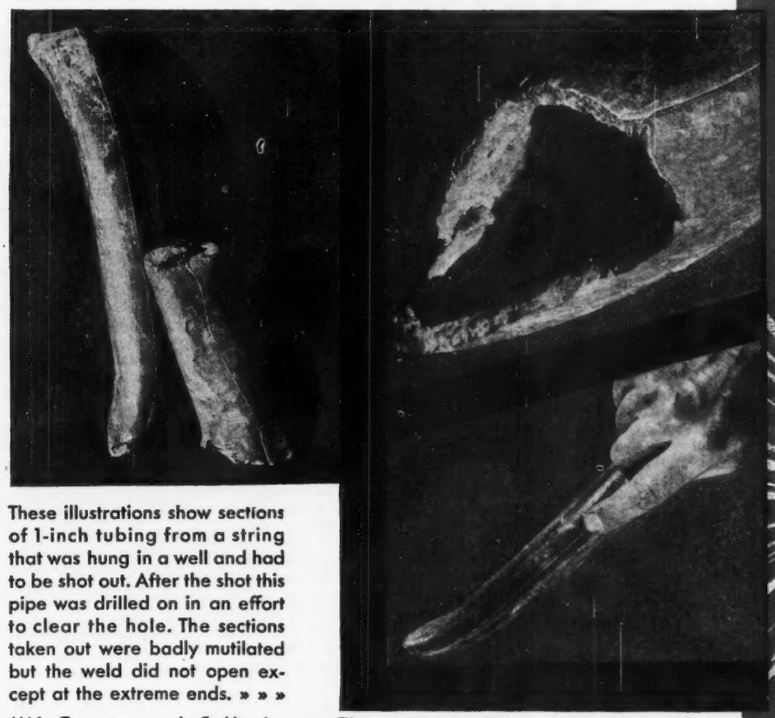
DYNAMITED!

but the weld did not open

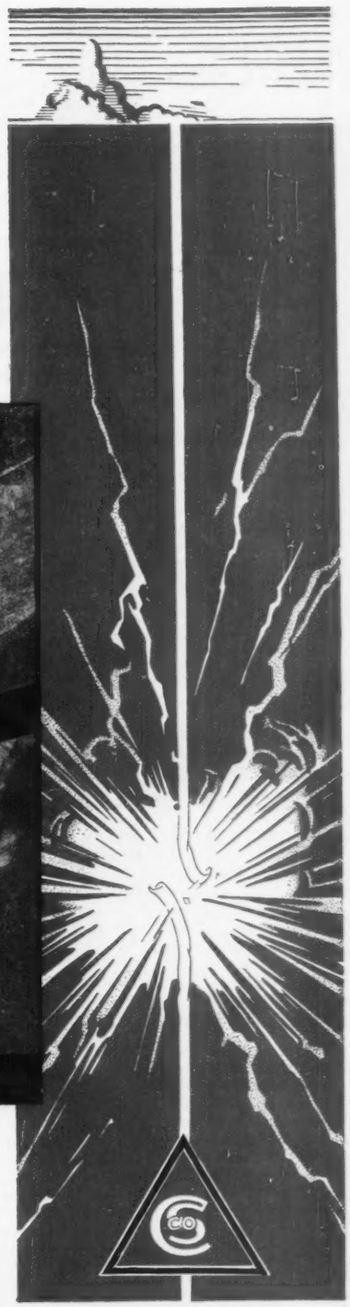
ANOTHER PROOF THAT

YOUNGSTOWN

PIPE IS GOOD PIPE



These illustrations show sections of 1-inch tubing from a string that was hung in a well and had to be shot out. After the shot this pipe was drilled on in an effort to clear the hole. The sections taken out were badly mutilated but the weld did not open except at the extreme ends. » » »



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CONTINENTAL

Pipe Line Construction News

PREPARING TO LAY LINE INTO RED COULEE AREA

CASPER, Wyo., Feb. 1.—The Maple Leaf refinery at Coutts, about 6 miles west of the Red Coulee Field, Montana, is preparing to lay a pipe line to take care of the production. The refinery is just across the line in Canada and Sweetgrass is the town on the Montana side, Sweetgrass and Coutts being separated by the main street between the two towns. The Maple Leaf refinery has a capacity of 5,000 bbls. daily and has been obtaining its crude from the Sunburst Field and paying an import tax on it. Now this refinery will have a supply of oil from the Canadian side of the line without the import duty and the shortness that had threatened to shut down the plant in the past has disappeared.

The Illinois Pipe Line Co. is also considering laying a pipe line from the new field to a connection with its pipe line at Coutts. The Illinois line runs from the Sunburst Field to the Canadian boundary and supplies the refineries at Regina and Calgary with crude from Sunburst. By piping the oil across the international boundary, a saving in import duty is effected.

Gas interests are again active. It now appears that the Canadian government has signified its intention of lifting the export duty on natural gas so that the gas from the Turner Valley Field can be piped into Montana and this will enable the large gas interests to pipe gas from the Wyoming fields and also from the Canadian fields, thus supplying the proposed system with gas from both ends.

ANACONDA AND BUTTE LINE IN NEGOTIATION

DENVER, Colo., Feb. 1.—Negotiations which have been in progress for some time between oil companies and individuals owning gas producing properties in the Big Horn Basin and representatives of two pipe line companies, looking to the construction of a natural gas line from Wyoming to Anaconda and Butte, Mont., have not yet been concluded. The Moody-Seagraves interests of Houston, Tex., which last year acquired control of the Cody Petroleum Co., operating in Oregon Basin and drilling some wildcat structures, and the Hope Engineering Co. are the concerns most active in the plans. Whether the line will be built and who will undertake it may not be known for a few months. If the plans are successfully matured the project will compare in extent and cost with the Amarillo-Denver and Wyoming-Utah natural gas system constructed in the past year or two.

WEST TEXAS LINES

FORT WORTH, Tex., Feb. 1. — Survey for a pipe line from its Midland tank farm to the SE of Section 6, Block A-46, public school land, Andrews County, has been completed by Atlantic Pipe Line Co. The survey, it is said, will be extended into Lea County, New Mexico.

Shell Pipe Line Co., according to a report, will lay a line from its Crane County carrier to Cranfill & Reynolds' No. 1 Masterson in Section 104, Block 10, H.&G.N. Railway Co. Survey, in Pecos County. This well is 25 miles northwest of the Taylor-Link Pool and 10 miles southeast of the Pecos Valley area.

Humble Pipe Line Co. is connecting with Transcontinental and Arkansas Fuel's No. 1 Matthews in Section 10, Block 194, G.C.&S.F. Railway Co. Survey, which recently extended the Yates Pool more than a half mile west.

NEBRASKA INCORPORATION

LINCOLN, Neb., Feb. 3.—The Nebraska Natural Gas Co. organized by the Studebaker interests, has filed articles of incorporation, with $1,500,000 capital. It will operate natural gas pipe lines and sell to consumers and existing gas plants in various towns. It has applied to the State Railway Commission for authority to issue $500,000 common and $1,000,000 preferred, and to execute a $1,000,000 mortgage. These are to be turned over to the North American Light & Power Co., which has advanced the $2,000,000 expended in construction to date.

REPORTS ON EXTENSION INTO THE HOBBS AREA

DENVER, Colo., Feb. 1. — Reports have been current for the past week or two that the Shell Pipe Line Co. was planning to extend its lines into the Hobbs area in Lea County, New Mexico. The rumors had gone so far as to say that application for a permit to build from a connection in Texas already had been filed with the Interstate Commerce Commission. A careful inquiry fails to reveal any confirmation of the reports. If such a line is contemplated, a permit from the Secretary of State of New Mexico also will be necessary, but no application has been filed up to this time either by the Shell company or any other concern.

If a line is built into the Hobbs area, the Humble Pipe Line Co. or the Texas Pipe Line Co. are the most logical concerns to undertake it. The Humble has a line from Winkler County into the Lea Pool, and it has brought in a large producer in the Hobbs Pool. It would require about 40 miles of construction. The Texas Pipe Line Co. would have about half that distance to build from a connection with its line into the Lea Pool. It is understood that the Humble company has looked with favor upon such a project if it could arrange for the purchase of production, and now that it has its own proven acreage in the pool, it may decide to go ahead with it.

AIRPLANE USED TO FIND LEAK IN GAS LINE

An airplane of the Continental Oil Co. was pressed into service during the recent cold weather when line walkers of the company's gas lines in the Greyhorse Field near Burbank, Okla., could not find a break in the gas line. After flying 15 miles occupants of the plane discovered a geyser-like disturbance in the dirt and snow. The location was noted on a rough map and a repair crew soon reached the place and repaired the damage. The break occurred in a 10-inch line that supplies Ponca City as well as other communities with natural gas. When automobiles were blocked by snowdrifts line walkers of the Cities Service Gas Co. rode horseback and others walked for miles through blinding snow storms and subzero temperatures in order to keep the gas flowing through the pipe lines from the wells. Several employes suffered frozen fingers, ears and feet through such exposure. The company operates 3,600 miles of gas pipe line in four states, Kansas, Oklahoma, Texas and Missouri, taking gas from over 900 wells and serving more than 165 towns. Hundreds of company men were on duty day and night during the severe storms to keep gas service going. Similar experiences were reported by several other gas companies. G. M. Henderson, manager, Apache Gas Co., at Perry, had both of his legs frozen while walking the gas line between Perry and the Sun-Ray well.

NATURAL GAS PROJECTS BECOME MORE DEFINITE

By B. E. V. Luty

PITTSBURGH, Pa., Feb. 3.—Pipe mills appear to have further and more definite information about natural gas line projects, likely to come to a head for completion before next winter, and state it is altogether probable there will be much demand for line pipe this year. It is regarded as altogether probable that the Texas to Chicago line will be laid, by the various interests getting together in one alignment or another. There is no definite idea now as to who would place orders for the pipe involved.

To date there is no substantial increase in demand for tubular goods, which remains decidedly light. There is a little picking up in standard or merchant pipe but not much, and it is thought unusually cold weather has been an adverse influence.

Chances are that before many months have elapsed one or two of the largest pipe manufacturers will announce their ability to make large diameter pipe by electric welding. For more than a year much experimenting has been done and naturally the work is kept as secret as possible. The first producer was the A. O. Smith Corp., Milwaukee, production beginning in September, 1927, on large diameter pipe and recently the size possible was increased to 26-inch. Last year the Republic Iron & Steel Co. started making the smaller sizes by electrical welding and announced its intention to make large diameter also. It is generally understood that both the National Tube Co., United States Steel Corp. and Youngstown Sheet & Tube Co. have done much work in this direction.

Average operation of both pipe and tube mills may still be estimated at not over about 40 per cent. There are ups and downs from week to week and the average for January as a whole was no doubt distinctly under 40 per cent.

There are widespread reports of increasing steel production, with some estimates running nearly 75 per cent for the steel producing rate as a whole. There is a strong probability that these reports are overdrawn, for details are lacking as to where such a large amount of steel production would be going. The steel consuming lines do not show any very important changes. Agricultural implements works are running very well, as they have been doing right along. Structural fabricating shops entered the year with well filled order books but fresh bookings have been light and there is no increase in the steel going to them as the flow was already large.

The automobile industry is still doing quite poorly. It is buying some steel, instead of practically none in December, but the tonnage is far from large, and some steel makers state that the poorest of their customers are the automobile and parts makers. There are decided chances of improvement in that direction for it is clear the automobile industry has been and is very conservative in production. This is illustrated, for instance, by its frequently placing orders by telegraph or telephone.

Pipe prices continue to hold very well indeed all along the line and outside of standard rails they are the only important finished steel product that has held former prices, declines having been practically general although not large.

Semifinished steel has just had a general decline of $1 a ton. Billets, slabs and sheet bars had been quotable at $34, but the market was regarded as far from firm. A Cleveland producer announced a reduction in sheet bars to $33 and other mills must follow, putting the whole list down to $33, for standard billets, slabs and sheet bars, f.o.b. maker's mill. Pittsburgh, Youngstown or Cleveland. The price is for rolling billets, and presumably forging billets will take only their usual $5 extra, but for the time being forging billets may be quoted at $38 to $39.

KETTLEMAN GAS LINE TO PUGET SOUND TOWNS

SAN FRANCISCO, Calif., Feb. 1.—California natural gas for Portland and Puget Sound cities will be a development in the near future, according to reports current here in financial circles.

The Pacific Gas & Electric Co. has been making a survey of the Pacific Northwest territory as a potential market for natural gas from Kettleman Hills, these reports stated. The company itself gave out no statement on the subject.

Should the plan go through, it would mean an enlargement of the company's pipe lines from Kettleman Hills to San Francisco Bay region and an extension of its lines north from Redding, where they now stop.

Portland, Seattle, Tacoma and other cities of western Washington and Oregon would be served.

STANDARD-P. G. & E. LINE

Standard Oil Co. of California may build a gas line from Kettleman Hills to San Francisco Bay or elsewhere without getting a certificate of public necessity and convenience from the State provided it uses the gas or sells it under contract to one or more companies. That these companies may sell the gas to consumers, or are themselves public utilities, will not make the Standard a public utility company. The knowledge of this fact, together with Standard's ownership of half of Kettleman Hills, no doubt, says the California Oil World, had its effect in bringing about the friendly agreement with P. G. & E. for a joint pipe line.

The Ventura Fuel Co., which operates a gas line between Ventura and Los Angeles, is not a public utility although it is owned and operated by the same interests that control public utility gas companies and it sells the gas to these companies for distribution and sale to the consumers.

NEW GAS LINE AT FORT SCOTT

The L. E. Meyers Construction Co. at the present time is constructing a gas line from the Fort Scott, Kans., town border station to connect with the main line extending from Fort Scott to Nevada, Mo. The line is being constructed for the Missouri Public Service Co., which owns the gas distribution system in Nevada. The Cities Service Gas Co. sells gas wholesale to the Missouri Public Service Co. at the Fort Scott town border station. There are about 6¼ miles of the new line to be laid and approximately 1 mile has already been completed.

MISSOURI GAS DISTRIBUTION

Gas Service Co. has been granted permission by the Missouri Public Service Commission at Jefferson City, Mo., to transfer the natural gas distribution systems in southwestern Missouri towns to the Ozark Distributing Co., a recently organized subsidiary. The towns to be operated under this company are those on the new line recently completed to Springfield, Mo. The distribution systems are in Neosho, Billings, Monett, Marionville, Pierce City, Republic, Aurora and Forest Park. Pierce City and Marionville have already been piped for gas and work is under way on the distribution system at Aurora.

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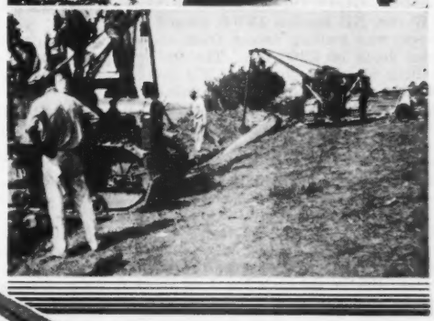

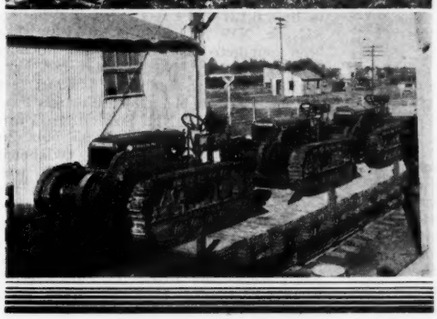

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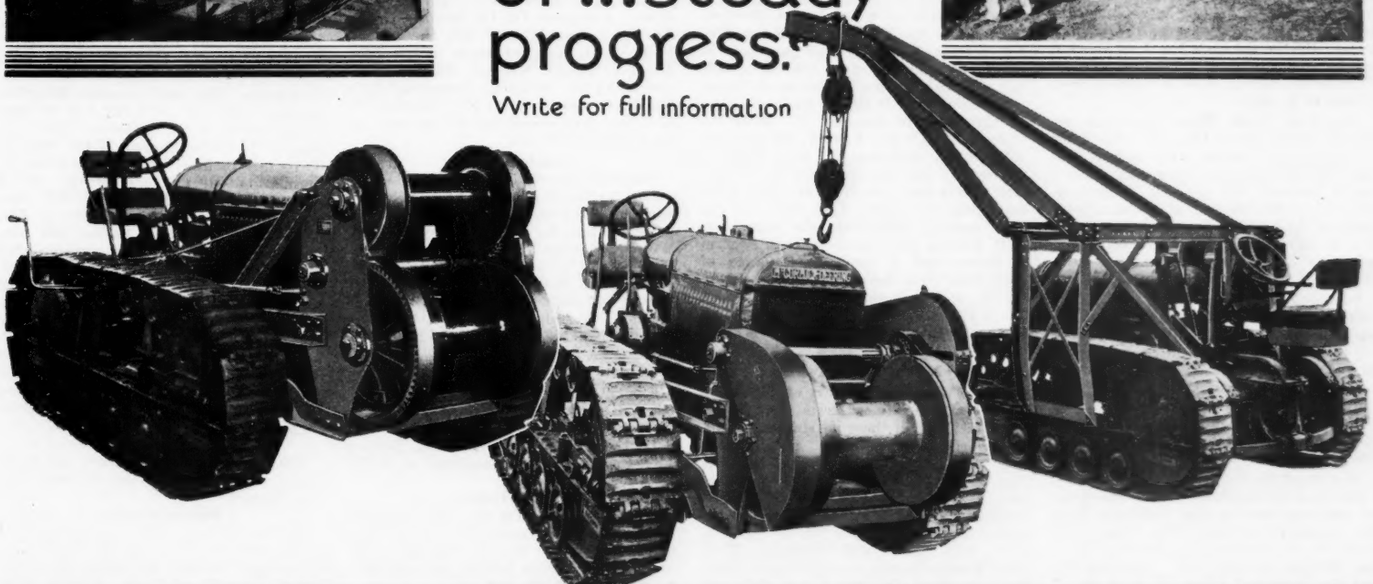

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(Continued from Page 42)

age production, and it will help bring production within the requirements which have been estimated by the pipe line companies to be 600,000 bbls. daily in Oklahoma. East Earlsboro Pool has the largest decline, St. Louis Pool and Carr City Pool also showing losses. The decline in the Seminole area outside of the St. Louis Pool was approximately 23,500 bbls.

Several drilling tests in the new Konawa district were expected to reach the pay sand in a few days. Independent Oil & Gas Co.'s No. 1 in the SE cor. NE Section 8-6-6, Seminole County, has been plugged back to 2,897 feet, and swabbed 393 bbls. Champlin Oil & Refining Co.'s No. 1 in Section 9-6-6 flowed 294 bbls. of oil at a total depth of 2,868 feet. McCulloch Oil Co.'s No. 1 Songster, SE cor. SW NE Section 8-6-6, was landing the 5-inch casing and showing oil at a total depth of 2,898 feet. Twin State Oil & Gas Co.'s No. 1 Charlie, NE cor. SE SW Section 8-6-6, was coring at 2,848 feet. Empire Oil & Refining Co.'s No. 1 Skinner in Section 9-6-6 made 832 bbls. Same company's No. 2 Skinner, SW cor. Section 9-6-6, was drilling at 2,520 feet. Independent Oil & Gas Co.'s No. 1 Okfuskee, NW cor. SW NW Section 16-6-6, was drilling at 2,840 feet, corrected measurements. Gypsy Oil Co.'s No. 1 Harjoche, in Section 8-6-6, had sand at 2,852-57 feet, and cemented casing on top of the sand.

East Earlsboro's Decline

East Earlsboro Pool shows a decline of 15,900 bbls. on the gauge for the week ending January 29. Production in the pool declined while two new wells were added to the area. The pool is being curtailed 66⅔ per cent of its potential production. Gypsy Oil Co.'s No. 3 Noble, NW cor. NE Section 18-9-6, an old producer, was drilling deeper from the old total depth of 4,260 feet. The test was drilling ahead in lime at 4,352 feet on the report of February 1. Sinclair Oil & Gas Co.'s No. 7 Nichols, SW cor. NE NW Section 19-9-6, has been completed for 1,060 bbls. of oil on the gas lift. Gypsy Oil Co.'s No. 4 Maley, SE cor. NW NW Section 20-9-6, has also been completed for 577 bbls. of oil on the swab.

Earlsboro Pool declined about 1,500 bbls. Practically all the tests in townsite have resumed drilling operations after being shut down because of the lack of water. Easton Oil Co.'s No. 1 on Block 6 in the townsite swabbed 1,120 bbls. of oil from the Wilcox sand at 4,336-45 feet. It was to be shot.

The East Little River Pool has declined about 2,000 bbls. on the daily average gauges for the week ending January 29. Mid-Continent Petroleum Corp.'s No. 3 Yarbola, SE cor. NE, Section 8-7-7, had 15,000,000 feet of gas at a total depth of 3,142 feet. Superior Oil Corp.'s No. 2 Reed, NW cor., Section 9-7-7, failed to find oil or gas and has been abandoned at 3,172 feet.

Production in the older area in the Little River Pool was steady, only showing a decline of about 100 bbls. Tidal Oil Co.'s No. 1 Johnson, in Section 1-7-6, an old producer has been plugged back and was being whipstocked at 3,116 feet. Pure Oil Co.'s No. 13 Cotcha, NE cor. NW NE, Section 23-7-6, was flowing 135 bbls. a day at a total depth of 3,199 feet.

The Maud Pool declined only 300 bbls. a day from the previous week. The deepest drilling test in the Seminole area has resumed drilling. The Gypsy Oil Co.'s No. 9 Barkus, in Section 6-8-6, was drilling at 5,844 feet. Amerada Petroleum Corp. and Dixie Oil Co.'s No. 2 Smith, SW cor. NE NE, Section 8-8-5, has increased its production to 100 bbls. a day from deeper drilling. The well was drilled to a total depth of 4,049 feet.

The Carr City Pool has declined about 2,400 bbls. on the daily average gauge for the week ending January 29. Gypsy Oil Co. and others' No. 1 Bruner, NW cor. SE, Section 23-8-5, south of Carr City, had the Wilcox sand at 4,325-36 feet with 1,500 feet of water and was shut down.

St. Louis Production Drop.

The St. Louis Pool reached a new low of the year when it declined about 3,000 bbls. a day from the previous week. The daily average production of the pool was 42,172 bbls. from 455 wells. Pure Oil Co.'s No. 1 Duvall, NW cor. NE SE, Section 4-7-4, made 70 bbls. from the Hunton lime. It was drilling in Hunton at 3,990 feet and was expected to be drilled to the Wilcox sand. Indian Territory Illuminating Oil Co.'s No. 2 Brandenburg, SW cor. SE SE, Section 35-8-4, flowed 1,808 bbls. from the Hunton lime at a total depth of 3,735 feet. It is the most northwesterly producer in the district. Atlantic Oil Producing Co. and Wofford Drilling Co.'s No. 1 McGee, NE cor. NW SE, Section 4-7-4, Pottawatomie County, has 1,200 feet of oil in the hole from the Viola lime at a total depth of 4,231 feet. The well flowed 515 bbls. from the Hunton lime. Twin State Oil Co.'s No. 1 Curley, in Section 22-7-4, had the Viola lime at 4,103 feet, and was landing 8-inch casing. Prairie Oil & Gas Co.'s No. 1 Deathridge, NW cor., Section 28-7-4, had the Hunton lime at 3,823-25 feet, with 3,000 feet of oil in the hole. Prairie Oil & Gas Co. and Tom Slick Oil Co.'s No. 1 Walters, in Section 12-7-4, was drilling at 3,850 feet in Hunton lime with nothing showing.

Beebe District

Several tests in the Beebe area in Pontotoc County were showing oil. Only one well was completed. Texas Pacific Coal & Oil Co.'s No. 3 Hatcher, NW cor. NE NE Section 30-5-5, Pontotoc County, made 60 bbls. after a shot. The well is producing from pay at 2,490-2,530 feet. Independent Oil & Gas Co.'s No. 1 Jones, SW cor. Section 8-5-5, was dry and has been abandoned at 2,853 feet. Benedum-Trees' No. 1 Hagers, NW cor. NE NW Section 33-5-5, swabbed 100 bbls. from a total depth of 2,555 feet in the Viola lime. Sunray Oil Corp.'s No. 9 Cully in Section 18-5-5 made 4,000,000 feet of gas from the Gilcrease sand at 2,298-2,330 feet, and was drilling deeper at 2,380 feet.

Logan County Developments

The Roxana Pool in Logan County has only one drilling test, the Wentz Oil Corp.'s No. 4 Williams, SW cor. NW NE Section 31-19-4w, which is rigging up standard tools at a total of 4,820 feet. Same firm's No. 3 Williams, NE cor. NW NE Section 31-19-4w, was shooting the casing to abandon after finding a hole full of water in the Wilcox sand. Same company's No. 2 Williams made 168 bbls. on the gauge of January 31. Shell Petroleum Corp.'s No. 4 Story, SE cor. NE SW Section 30-19-4w, has been drilled 4 feet deeper and has increased its production to 598 bbls. the first 24 hours after deepening, the three other wells on the lease making 2,380 bbls. the same day. J. S. Cosden, Inc.'s four wells in Section 31-19-4w, had a total daily gauge of 2,520 bbls. from the Gardner lease. Skelly Oil Co. and Independent Oil & Gas Co.'s No. 1 Elrod, NE cor. SW Section 31-19-4w, made 157 bbls. on the gauge of January 31.

Northwestern Tests

In the northwestern part of Oklahoma several of the wildcat tests were below 6,100 feet, one of these nearing the 7,000-foot horizon. The deepest test in that part of Oklahoma was the Sinclair Oil & Gas Co.'s No. 1 Howell, C SW SW Section 14-26-24w, Harper County. This wildcat was drilling at 6,903 feet in sandy shale. Same company's No. 1 Steward, NW cor. SW SW Section 33-27-16w, Woods County, was drilling at 6,561 feet. Peerless Oil Producing Co. and Sinclair Oil & Gas Co.'s No. 1 Crowell, C NW NE Section 23-28-16w, Woods County, was drilling at 3,400 feet. Prairie Oil & Gas Co.'s No. 1 Wilber, NE cor. NW Section 23-23-17w, Woodward County, was drilling at 6,040 feet. Bu-Vi-Bar Petroleum Corp. and others' No. 1 Thompson, SE cor. SW Section 10-25-15w, Woods County, was shut down at 6,104 feet. Harris & Haun's No. 1 Wyatt, C SE Section 9-23-20w, Woodward County, was drilling at 5,250 feet.

Seminole Production

Production of the important pools in the Seminole area for the week ending January 29 declined approximately 26,314 bbls. per day compared to the previous week's gauges. The area averaged 314,369 bbls. from 2,579 wells. The production of the first 11 pools in the table which comprise the Seminole area had a daily average of 233,689 bbls. from 1,814 wells. The daily average gauges of pools were as follows:

Pool—	Wells	Bbls.
Little River	359	44,621
East Little River	55	18,108
Carr City	58	7,170
Maud	136	6,553
Mission	110	14,392
Bowlegs	293	22,199
Earlsboro	294	28,104
East Earlsboro	119	57,498
Seminole	273	23,095
East Seminole	31	4,765
Searight	86	7,184
Allen	243	23,785
Asher	26	2,236
St. Louis	455	42,172
Sasakwa	41	12,487
Total	2,579	314,487

Shipments from Seminole

The daily average pipe line and tank car shipments show a decrease of approximately 25,000 bbls. from the previous week in the Seminole area. The shipments for the week ending January 29 were as follows:

Company—	Bbls.
Barnsdall	2,098
Champlin	3,716
Continental	1,449
Consolidated	500
Cosden	6,796
Empire	5,974
Gypsy	23,823
Magnolia	10,707
Oklahoma	34,216
Prairie	35,512
Producers & Refiners	2,536
Pure	3,929
Shaffer	5,842
Shell	16,541
Sinclair	36,820
Texas	19,796
Tidal	12,699
White Oak	633
Total	223,632
Tank cars	6,614
Grand total	230,246

Creek County

Transcontinental Oil Co. made location for No. 1 Cubbie, SE cor. SW, Section 19-17-8. J. H. Wright Estate's No. 1-A Cartright, CEL SW, Section 19-17-11, has drilled to 2,400 feet and shut down. Franchott Oil Co. has the rig up for No. 7 Scott, C NW SE, Section 28-16-9. J. J. Kearney made location for No. 1-A Knight, NE cor. SE SW, Section 20-14-10. Magnolia Petroleum Co.'s No. 12 B. Lewis, CWL SW, Section 27-17-7, has been completed for 10 bbls. in sand 2,365-2,413 feet.

Caddo County

Magnolia Petroleum Co. has staked location for No. 7 Niles, NE cor. SE NW, Section 36-6-10w. English Drilling Co. made location for No. 5 Gafney, SE cor. NW SE, Section 31-6-9w. Louisiana Oil Refining Co.'s No. 1 Rowe, SW cor. NW NE, Section 36-6-10w, has been completed for 600 bbls. in sand 3,256-73 feet. Magnolia Petroleum Co.'s No. 3 Rowe, SE cor. NE NE, Section 36-6-10w, is a dry hole at 3,460 feet.

Carter County

Carter Oil Co. is erecting the rig for No. 1 Kalaawana, NE cor. NW, Section 30-1s-3w. Magnolia Petroleum Co.'s No. 3 Hightower, SW cor. NW NE, Section 30-1s-3w, has been abandoned at 4,370 feet.

Lincoln County

Magnolia Petroleum Co. made location for No. 1 School Land, SE cor. SW SE, Section 16-14-5. No. 1 Freeman, SW cor. SE SE, Section 8-14-4, made 52 bbls. in sand 4,992-5,001 feet.

Marshall County

C. B. Goddard Oil Co.'s No. 4 McComas, SW cor., Section 13-5s-5, has been completed for 25 bbls. in sand 525-32 feet. Bilbo Oil Trust Co.'s No. 4 Taliaferro, NE cor. SE SE SE, Section 14-5s-5, made 38 bbls. at 590 feet.

McClain County

Homaokla Oil Co.'s No. 1 Newsom, SE cor. NE NE, Section 16-5-3, made 46 bbls. in sand 2,674-78 feet, total depth 3,605 feet.

Muskogee County

Robert Webb's No. 1 Muskogee Townsite, Block 78, NW cor. SW NE NE, Section 34-15-18, is rigging up. L. R. Kershaw's No. 2 Fee, NE cor. SW SW SE, Section 15-13-18, is spudding. John Aggas' No. 4 Hawkins, SW cor. SE, Section 28-16-15, has been abandoned at 1,488 feet. Arthur Oil Co.'s No. 10 Spaulding, NE cor. SE NW NE, Section 34-15-18, made 500,000 feet of gas in sand 819-40 feet. L. R. Kershaw's No. 1 Fee, SW cor. SE SE, Section 15-13-18, has been completed for 83,000 feet of gas in sand 676-95 feet.

Okfuskee County

Champlin Oil & Refining Co. made location for No. 1 McGilbray, SE cor. NE NE, Section 18-12-11. Mitchell Oil Co.'s No. 5 Randall, NE cor. NW, Section 30-12-12, made 70 bbls. in sand 1,630-50 feet after plugging back from 3,374 feet.

Okmulgee County

D. M. Logan has the rig on the ground for No. 1 Clarkson, CWL NE SW, Section 32-15-13. J. E. Wallace's No. 11 Colbert, SE cor. SW SW NE, Section 14-14-14, is rigging up. Lambert Oil & Gas Co.'s No. 2 Blake, SW cor. NW SE, Section 7-13-15, made 750,000 feet of gas in sand 1,215-47 feet.

Oklahoma County

Heenan & Coe and others made location for No. 2 Cunningham, NW cor. NE SW, Section 1-11-3w. J. C. Shaffer and others' No. 1 Jones Community, SW cor. NW SW, Section 1-11-3w, is a location. Indian Territory Illuminating Oil Co. and others made location for No. 4 A. Brokaw, SE cor. NE NE, Section 13-11-3w, Oklahoma City Field. No. 4 C. Brokaw, NE cor. SE NE, Section 13-11-3w, is also a location.

Indian Territory Illuminating Oil Co. and others' No. 1 Verne, NW cor. SW SE, Section 13-11-3w, made 2,905 bbls. in lime 6,127-6,514 feet. No. 2 Wheeler, SE cor. NW SE, Section 13-11-3w, has been completed for 2,246 bbls. in lime 6,045-6,500 feet. No. 2 Drake, SE cor., Section 14-11-3w, had sand 6,369-91 feet and made 8,780 bbls. No. 1 Fortson Farley, NW cor. NE NE, Section 24-11-3w, has been completed for 8,995 bbls. in lime 6,075-6,497 feet. No. 1 Oklahoma City, C SE SE, Section 24-11-3w, was deepened to 6,624 feet and shut in for 6,745 bbls. Coline Oil Co.'s No. 3 Clauer, SE cor., Section 25-11-3w, made 4,609 bbls. in sand 6,481-99 feet. Indian Territory Illuminatnig Oil Co. and others' No. 1 Emmerson Joyce, NE cor., Section 25-11-3w, topped lime at 6,151 feet, drilled to 6,664 and made 675 bbls. No. 1 Mackey, NE cor., Section 26-11-3w, swabbed 199 bbls. at 6,443 feet in lime. Coline Oil Co.'s No. 1 Warren, SW cor., Section 18-11-2w, flowed 27,167 bbls. at 6,516 feet in lime. Indian Territory Illuminating Oil Co. and others' No. 1 Canfield Button, SE cor. NE SW, Section 19-11-2w, made 15,675 bbls. in lime 6,034-6,511 feet. No. 1 Farley, NW cor., Section 19-11-2w, has been completed for 30,438 bbls. in lime 5,997-6,507 feet. Shell Petroleum Corp.'s No. 5 Petty, NW cor. SW NE, Section 30-11-2w, has been completed for 35 bbls. at 6,504 feet in lime. No. 6 Petty, NE cor. NW NE, Section 30-11-2w, made 3,876 bbls. in lime 6,070-6,504 feet. No. 7 Petty, SE cor. NW NE, Section 30-11-2w, has been completed for 1,197 bbls. in lime 6,100-6,420 feet.

Osage County

Vacuum Oil Co. and others made location for No. 5, NW cor. NE SE, Section 15-26-6.

Pawnee County

Shaffer Oil & Refining Co.'s No. 1 Jones, SW cor. NE, Section 22-20-5, is a location. Foster Petroleum Co. made location for No. 9 Little, NE cor. SW NW, Section 6-20-8.

Payne County

Mulberry Oil Co. staked location for No. 5 Ballard, SW cor., Section 32-18-4. Glen Smith and others' No. 2 Curley Chief, SE cor. SW SE, Section 33-19-5, made 12 bbls. in sand 2,155-75 feet after plugging back from 3,565 feet. Shaffer Oil & Refining Co.'s No. 1 Searcy, SE cor. SW, Section 4-18-5, has been com-

pleted for 3,000,000 feet of gas in sand 2,705-20 feet after being plugged back from 3,655 feet.

Pontotoc County

Independent Oil & Gas Co.'s No. 1 Jones, SW cor., Section 8-5-5, Bebee Pool, has been abandoned at 2,853 feet. Magnolia Petroleum Co.'s No. 8 Reed, SW cor. SE NW SW, Section 17-5-8, made 125 bbls. in Cromwell sand 2,595-2,638 feet.

Stephens County

Sykes & Fossett made location for No. 2 Blake, NW cor. NE NW SE, Section 16-1s-8w. Empire Oil & Refining Co.'s No. 3 Miller, SE cor. NE NE, Section 5-2s-8w, is rigging up to deepen.

Tulsa County

Union Drilling Co.'s No. 2 Anthis, NE cor., Section 13-19-10, made 6 bbls. in sand 1,831-57 feet.

Pottawatomie County

Independent Oil & Gas Co. has the rig on the ground for No. 10 Knappenberger, SW cor. NW NE, Section 8-9-5, Earlsboro Pool. Indian Territory Illuminating Oil Co. moved the rig in for No. 3 Brandenburg, NW cor. SW SW, Section 35-8-4, North St. Louis Field. Independent Oil & Gas Co. and Mid-Kansas Oil & Gas Co. made location for No. 4 Weldfelt, NW cor., Section 2-7-4. Magnolia Petroleum Co.'s No. 1 Tartar, SW cor. NW SW, Section 15-7-4, is rigging up to deepen from 3,763 feet. Magnolia Petroleum Co.'s No. 2 Lynn, SE cor. NE NE, Section 21-7-4, St. Louis Pool, made 170 bbls. at 3,800 feet after plugging back from 4,150 feet.

Seminole County

Independent Oil & Gas Co. moved the rig in for No. 1 Johnson, C NE NE, Section 33-9-8. J. A. Hull's No. 1 Anderson, NW cor. SW SW, Section 9-8-7, is a rig on the ground. McCulloch Oil Co.'s No. 1 Snyder, SE cor. SW NE, Section 8-6-6, Konawa Pool, is preparing to deepen from 2,845 feet. Champlin Oil & Refining Co. and Shell Petroleum Corp.'s No. 5 Sachemeche, SW cor. SE SW, Section 9-6-6, is a cellar. Harris and others' No. 1 Roberts, NW cor. NE NW, Section 16-6-6, is a rig on the ground. Producers & Refiners Corp. made location for No. 3 Thomas, SE cor. SE NW, Section 5-7-7, East Little River Pool.

Magnolia Petroleum Co.'s No. 3 Moore, SE cor. NE SE, Section 24-9-5, Earlsboro Field, made 1,270 bbls. in Wilcox sand 4,160-73 feet. Carter Oil Co.'s No. 3 Harber, SW cor. SE SE, Section 7-9-6, has been completed for 125 bbls. in Wilcox sand 4,306-20 feet. Sinclair Oil & Gas Co.'s No. 7 Nichols, SW cor. NE NW, Section 19-9-6, East Earlsboro Pool, topped Wilcox sand at 4,200 feet, drilled to 4,226 feet and made 1,110 bbls. Tidal Oil Co. and Interocean Oil Co.'s No. 1 Lasley, NE cor. SW, Section 19-9-6, made 3,665 bbls. in sand 4,100-10 feet. Amerada Petroleum Corp. and Dixie Oil Co.'s No. 2 Fullerton, NE cor. SE, Section 19-9-6, has been completed for 3,275 bbls. in Wilcox sand 4,160-89 feet. Tidal Oil Co. and others' No. 1 Harjo, NW cor. NE NW, Section 20-9-6, has been completed for 425 bbls. after plugging back from 4,290 feet to 4,287 feet. McMan Oil Co.'s No. 1 Jones, NW cor. SE NW, Section 20-9-6, made 1,270 bbls. in Wilcox sand 4,230-48 feet. Carter Oil Co.'s No. 3 Coker, NW cor. SE SW, Section 2-8-5, Mission Pool, made 1,265 bbls. in Wilcox sand 4,222-31 feet. Continental Oil Co. and others' No. 1 Harjo, NW cor. SE, Section 26-8-5, is dry and abandoned at 4,431 feet in Wilcox sand topped at 4,414 feet. Carter Oil Co.'s No. 4 Walker, NE cor. NW, Section 24-7-6, Little River Pool, made 550 bbls. in Wilcox sand 4,124-45 feet. W. B. Pine's No. 1 T. Harjo, NE cor. NW, Section 31-7-6, is a dry hole at 1,305 feet. Mid-Continent Petroleum Corp.'s No. 2 Yarhola, NW cor. SW NE, Section 8-7-7, East Little River Pool, has been completed for 1,930 bbls. in Cromwell sand 3,260-95 feet. Independent Oil & Gas Co.'s No. 1 Simedihake, SE cor. NE, Section 8-6-6, Konawa Pool, made 643 bbls. in Cromwell sand 2,885-99 feet. Carter Oil Co.'s No. 1 Brannon, NW cor. SW NW, Section 18-6-8, had Wilcox sand 4,214-15 feet and made 10,000,000 feet of gas. The Prairie Oil & Gas Co.'s No. 1 Bodkin, SW cor., Section 26-8-4, has been completed in Misener sand 3,869-74 feet for 55 bbls. Producers & Refiners Corp.'s No. 1 Lucy, SW cor. NW SE, Section 12-5-7, has been completed for 38,750,000 feet of gas in Cromwell sand 2,850-90 feet.

PRODUCTION OF SEMINOLE POOL

Average daily production for the Seminole area for the week ending January 27:

Little River Pool

Company, farm—	S.T.R.	Wells	Prod.
Amerada:			
Nitey	2-7-6	3	235
Amerada-Wilcox:			
Fore	35-8-6	2	435
Barnsdall:			
Cotcha	23-7-6	3	247
Factor	13-7-6	1	136
Hotulka	22-7-6	3	323
Walker	4-7-6	1	8
Blackwell:			
Baker	11-7-6	5	396
Nitey	35-8-6	5	142
Talley	14-7-6	4	896
Thomas	11-7-6	1	Off
Bryan-Emery:			
Carter	4-7-6	1	12
Carter:			
Alec	23-7-6	2	94
Cotcha	23-7-6	3	84
Cudjo	23-7-6	3	174
Factor	26-7-6	1	26
Fish	36-8-6	3	207
Harjo, C.	11-7-6	2	1,602
Harjo, M.	13-7-6	4	211
Jackson	11-7-6	5	1,964
Larney, B.	26-7-6	2	211
Larney, J.	24-7-6	4	774
Lena	10-7-6	1	228
Moore	11-7-6	2	80
Tewee	14-7-6	6	527
Thomas, M.	11-7-6	1	120
Walker	24-7-6	4	1,940
Wilson	12-7-6	1	165
Champlin:			
Tewee	14-7-6	3	616
Continental:			
Cosar, L.	36-8-6	7	595
Cosar, M.	25-8-6	1	206
Milsey	11-7-6	2	245
Empire:			
Charty	24-7-6	3	537
Coker	13-7-6	4	1,405
Cotcha	27-7-6	2	Off
Sandlin	3-7-6	1	Off
Gypsy:			
Brown, C.	33-8-6	1	157
Brown, M.	33-8-6	1	152
Campbell	36-8-6	1	6
Conard	22-7-6	2	86
Cosar, W.	36-8-6	2	83
Cotcha	23-7-6	13	741
Denmark	11-7-6	3	368
Hulhoke	14-7-6	11	1,065
Nungee	1-7-6	1	Off
Potty	36-8-6	4	225
Renton	11-7-6	5	2,385
Willie	24-7-6	1	1,551
Independent:			
Carpenter	27-7-6	2	242
Davis, R.	13-7-6	7	705
Tewee	14-7-6	6	686
Harris	23-7-6	13	1,063
Williams	15-7-6	1	254
Independent et al:			
Davis, L.	2-7-6	5	622
Reed	26-7-6	1	Off
I. T. I. O.:			
Campbell	1-7-6	1	210
Dungar	35-8-6	3	192
House, M. A.	1-7-6	1	11
House, W. E.	1-7-6	1	13
House, W. E. "B"	2-7-6	4	448
Hull	26-8-6	2	232
Jackson	1-7-6	3	161
McCulla	1-7-6	2	431
Nitey	2-7-6	5	69
Phoebe "A"	36-8-6	1	10
Phoebe "B"	36-8-6	2	152
Soketeche	1-7-6	3	240
Magnolia:			
Cruse	2-7-6	4	496
Denby	11-7-6	4	112
Harjo "A"	14-7-6	2	45
Harjo "B"	14-7-6	2	Off
Potty	35-8-6	4	82
Reed	22-7-6	3	344
Mid-Continent:			
Bruner	11-7-6	4	95
Eleck	23-7-6	1	11
Wadsworth	36-8-6	4	35
Pine:			
Bean	13-7-6	2	332
Heyecka	26-8-6	7	736
Pine-Phillips:			
Potty	35-8-6	1	22
Prairie:			
Chilcoat	25-8-6	3	320
Coker	1-7-6	2	297
Gibson	14-7-6	5	689
Harris	14-7-6	4	522
House	2-7-6	4	90
Reed	13-7-6	2	671
Talley	14-7-6	6	487
Williams	15-7-6	2	76
Wood	26-7-6	3	64
Prairie-Amerada:			
Sunny	14-7-6	5	696
Prairie-Slick:			
Cudjo	26-7-6	4	364
Producers & Refiners:			
Davis	13-7-6	1	605
Johnson	24-7-6	2	230
Moppin	24-7-6	2	138
Pure:			
Brinson	24-7-6	3	496
Cotcha	23-7-6	12	1,850
Harjo	11-7-6	5	1,700
Hollins	11-7-6	1	184
Reiter-Foster:			
Bunyard	14-7-6	2	445
Ritter	31-7-6	1	7
Shaffer:			
McCan	33-7-6	1	21
Shell:			
Ceaser	11-7-6	2	208
Glass	26-7-6	1	Off
Hotulka	23-7-6	5	579
Johnson	13-7-6	4	447
Sinclair:			
Blanton	11-7-6	1	222
Cosar	36-8-6	3	601
Haney	12-7-6	1	Off
Tewee	14-7-6	2	441
Pompey	24-7-6	1	95
Skelly:			
Carl	14-7-6	2	852
Snowden-McSweeny:			
Tiger	13-7-6	2	30
Superior:			
Pulutka	31-8-6	1	2
Texas:			
Brooks	25-8-6	1	3
Coker	1-7-6	3	94
Janey	11-7-6	6	541
Texas-Independent:			
Hotulka, D.	23-7-6	7	495
Hotulka, H.	22-7-6	2	109
Tidal:			
House	1-7-6	1	279
Johnson	1-7-6	1	Off
Twin State:			
Lowe	25-8-6	1	20
Total		359	44,621

East Little River Pool

Company, farm—	S.T.R.	Wells	Prod.
Amerada:			
Chilcoat	4-7-7	1	481
Continental et al:			
Harrison	4-7-7	5	1,040
Gypsy:			
Payne	5-7-7	6	817
Walker	5-7-7	3	113
Magnolia:			
Brame	8-7-7	2	4
Reed, E. M.	31-8-7	1	16
Scipio	4-7-7	1	7
Wolf	20-8-7	1	18
McCulloch et al:			
Harrison	4-7-7	1	Off
Mid-Continent:			
Smith	5-7-7	13	6,001
Yarhola	9-7-7	1	760
Prairie:			
Smith	5-7-7	3	2,303
Prairie-Slick:			
Carr	9-7-7	1	Off
Tiger	8-7-7	2	83
Producers & Refiners:			
Lusty	5-7-7	1	24
Sakteke	9-7-7	1	26
Thomas	5-7-7	2	526
Sinclair:			
Phillips	5-7-7	8	4,974
Texas:			
Chilcoat	4-7-7	2	915
Total		55	18,108

Carr City Pool

Company, farm—	S.T.R.	Wells	Prod.
Barnsdall:			
Coker	11-8-5	9	640
Fife	14-8-5	2	70
Barnsdall et al:			
Tulley	10-8-5	1	85
Carter:			
Coker	2-8-5	4	1,070
Rogers	2-8-5	1	1,840
Empire:			
Cluck	11-8-5	13	1,700
Gypsy:			
Coker, Chippy	2-8-5	1	311
Fife	14-8-5	1	12
I. T. I. O.:			
Simpson	10-8-5	1	Off
Tulley	10-8-5	1	Off
Magnolia:			
Fee	11-8-5	3	245
Killings	14-8-5	1	3
Prairie:			
Billington	11-8-5	10	776
Mitchell	15-8-5	1	57
Sinclair:			
Bean	11-8-5	5	Off
Harjo, L.	11-8-5	4	361
Total		58	7,170

Maud Pool

Company, farm—	S.T.R.	Wells	Prod.
Amerada:			
Ballard	1-8-4	1	36
Fehlig	7-8-5	1	31
Gossland	8-8-5	3	34
Gravel	1-8-4	1	8
Hallum	1-8-4	4	1,046
Smith	8-8-5	1	214
Amerada-Barnsdall:			
Wallace	17-8-5	4	93
Amerada-Hull:			
Green	20-8-5	3	42
Continental-Shell:			
Everett	18-8-5	2	14
Empire:			
Smith	8-8-5	2	272
Gypsy:			
Bourassa	7-8-5	4	45
Gossland	9-8-5	3	373
Miller	18-8-5	8	210
Independent:			
Harding	18-8-5	4	119
I. T. I. O.:			
State Land	16-8-5	1	18
Laurel O. & G.:			
Billington	18-8-5	3	97
Magnolia:			
Billington	8-8-5	3	28
Green	20-8-5	3	52
Magnolia-Gypsy:			
Smith	20-8-5	1	38
McMan:			
Roberts	9-8-5	1	152
Mid-Continent:			
Shelton	18-8-5	3	20
Phillips:			
Hudson	19-8-5	3	97
Wallace	17-8-5	1	15
Pine:			
Lingerfelt	18-8-5	2	129
Smith	8-8-5	2	187
Prairie:			
Campbell	18-8-5	8	100
Jordan	9-8-5	1	20
Prairie et al:			
Villines	20-8-5	1	Off
Pure:			
Lindley	18-8-5	8	75
Urbanskey	19-8-5	2	21
Wiley	8-8-5	4	459
Shell:			
Jordan	9-8-5	4	1,210
Sinclair:			
Bellars	19-8-5	10	431
Calvin	7-8-5	3	45
Lewis	6-8-5	2	30
Smith	9-8-5	1	Off
Skelly-Lenox:			
Green	20-8-5	1	106
Skelly-Margay:			
Lingerfelt	18-8-5	4	49
Texas:			
Calvin	7-8-5	9	130
Tidal:			
Dunn	12-8-4	1	42
Everetts	18-8-5	2	29
Smith	8-8-5	1	19
Twin State:			
Colvin	7-8-5	2	60
Wilcox O. & G.:			
Smith	8-8-5	8	357
Total		136	6,553

Mission Pool

Company, farm—	S.T.R.	Wells	Prod.
Amerada:			
Rice	5-8-6	2	226
Carter:			
Fuswa	18-8-6	3	415
Micco	8-8-6	2	72
Amerada-Denver P. & R.:			
Melissa	9-8-6	1	324
Continental:			
Maines	7-8-6	4	232
Darby:			
Judy	1-8-5	1	50
Gypsy:			
Baby	6-8-6	1	15
Barkus, N.	8-8-6	10	2,126
Barkus, S.	7-8-6	1	8
Dosar	7-8-6	5	560
Hardy	7-8-6	5	179
Harjoche	7-8-6	3	5
Micco, L.	8-8-6	2	20
Mission	5-6-8-6	7	837
Mosar	1-8-5	4	316
Independent:			
Lawson	1-8-5	5	560
Independent-Kistler:			
Payne	7-8-6	3	692
McMahon:			
Harjo	7-8-6	2	595
Mid-Continent:			
Ripley	23-8-6	1	114
Minnehoma:			
Neal	7-8-6	4	525
Pine, W. B.:			
Harjo	6-8-6	3	946
Micco	8-8-6	1	25
Prairie:			
Crain	7-8-6	1	9
Melton	6-8-6	3	554
Micco	5-8-6	1	Off
Townsend	6-8-6	2	347
Prairie-Gypsy:			
Owens	18-8-6	2	75
Prairie-Slick:			
Nelly	12-8-5	1	111
Shaffer:			
Weaver	12-8-5	3	838
Shell-Continental:			
Hearndon	7-8-6	3	422
Shell-Papoose:			
Maines	7-8-6	8	738
Sinclair:			
Hardy	7-8-6	4	495
Judy	1-8-5	1	23
Tidal:			
Nellie	12-8-5	5	1,208
Twin State:			
Hayes	8-8-6	2	660
Judy	6-8-6	2	35
Ripley	12-8-5	2	35
Total		110	14,392

Bowlegs Pool

Company, farm—	S.T.R.	Wells	Prod.
Amerada:			
Rascoe	15-8-6	6	390
Atlantic:			
Baker	10-8-6	4	158
Fleet	23-8-6	3	60
Grayson	13-8-6	3	395
Jones "A"	16-8-6	2	14
Barnsdall:			
McNac	28-8-6	1	6
Morrow	11-8-6	4	163
Carter:			
Bowlegs, I.	15-8-6	4	232
Burden	23-8-6	2	180
Harjoche	14-8-6	6	338
Hilly, D.	23-8-6	3	180
Jones	11-8-6	4	350
Walker	16-8-6	4	278
Wise	23-8-6	11	941
Dixie:			
Lizzy	11-8-6	1	4
Empire:			
Lacey	14-8-6	6	112
Wise	23-8-6	2	97
Gypsy:			
Cumsey	10-8-6	4	172
Grayson	13-8-6	4	185
Harjoche	10-8-6	3	164
Jones	11-8-6	1	30
Walker	15-8-6	7	506
Wise	23-8-6	2	Off
I. T. I. O.:			
Barnett, A.	24-8-6	1	3
Barnett "B"	23-8-6	1	Off
Billington	22-8-6	3	242
Bowlegs	22-8-6	9	893
Davis	13-8-6	4	39
Fay	13-8-6	9	602
Goforth	15-8-6	12	762
Livingston	15-8-6	10	1,130
Lizzie	11-8-6	3	338
Walker	15-8-6	8	406
Williams	12-8-6	1	190
Wilmot	15-8-6	4	280

Company, farm—	S.T.R.	Wells	Prod.
Work	24-8-6	1	60
Youngblood	24-8-6	1	12
Magnolia:			
Davis, B. F.	13-8-6	3	347
Davis, M.	13-8-6	1	93
Hammond	10-8-6	8	310
Thodos	12-8-6	5	312
Vanburskirk	9-8-6	4	210
McCulloch:			
Bowlegs	22-8-6	1	13
Mid-Continent:			
Baker	10-8-6	4	116
Smith	12-8-6	6	420
Minnehoma:			
Bowlegs	13-8-6	1	11
Prairie:			
Gahagan	23-8-6	3	37
Harber	10-8-6	8	866
Jones, G.	11-8-6	3	144
Jones, N.	3-8-6	1	132
Templeton	12-8-6	4	1,357
Whitney	23-8-6	4	164
Pure:			
Reed	14-8-6	14	1,513
Strothers "D"	14-8-6	4	255
Strothers "E"	10-8-6	7	1,168
Shaffer:			
Lacey	14-8-6	3	280
Shell-Houston:			
Taylor	16-8-6	4	Off
Sinclair:			
Cumsey	10-8-6	4	751
Ellen	11-8-6	5	385
Harjo, E.	14-8-6	3	232
Jones	9-8-6	7	122
Taylor, M.	10-8-6	4	578
Taylor, W.	10-8-6	3	450
Walker, I.	22-8-6	4	570
Texas:			
Reed	14-8-6	11	480
Tidal:			
Grayson	13-8-6	4	323
Harjoche	10-8-6	6	648
Total		293	22,199

Earlsboro Pool

Amerada:			
Anderson	15-9-5	1	165
Cowden	4-9-5	7	601
Rogers	3-9-5	2	21
Barnsdall:			
Brown	10-9-5	3	498
Bruner, F.	2-9-5	2	83
Bruner, N.	10-9-5	2	112
Cudjo	14-9-5	1	15
Davis, D.	11-9-5	3	54
Davis, J.	11-9-5	4	257
Davis, M.	11-9-5	2	19
Gibson	9-9-5	7	247
Hearn	15-9-5	1	Off
Ingram, J.	1-9-5	6	142
Pack, S.	10-9-5	3	24
Peter	10-9-5	3	29
Sango	1-9-5	2	292
Sobolka	15-9-5	1	59
Sullivan	15-9-5	1	3
Sull-Harjo	10-9-5	2	6
Watsutka	12-9-5	3	282
Burke-Greis:			
Wisener	6-9-6	2	100
Burke-Greis-Red Bank:			
Mayes	1-9-5	3	1,202
Carter:			
Cox	31-10-6	1	72
Davis, S.	13-9-5	3	19
Gilliam	13-9-5	2	825
James	6-9-6	3	1,165
Shepherd	6-9-6	2	239
Continental:			
Keys	2-9-5	2	32
Spencer	12-9-5	4	392
Cosden:			
Anderson	13-9-5	2	318
Sarber	13-9-5	1	32
Empire:			
Barker	12-9-5	1	22
Edmundson	3-9-5	2	25
Empire-Amerada:			
Bullock, W.	8-9-5	3	790
Henry	8-9-5	1	902
Empire-Continental:			
Anderson	13-9-5	2	41
Empire-Gypsy:			
Keys	6-9-5	1	20
Gypsy:			
Bruner	10-9-5	4	770
Carter, B.	11-9-5	7	1,038
Earl	16-9-5	1	10
Hunick	5-9-5	2	716
Noble	12-9-5	3	332
Peter	10-9-5	1	45
Sango	1-9-5	11	1,099
State	16-9-5	2	106
Wisener	1-9-5	1	25
Eason Oil Co.:			
White	8-9-5	1	252
Eason-C. E. Knox:			
Langford	8-9-5	1	1,307
E. Haer:			
Haer	31-10-5	1	20
Hubbell-Graham:			
Dobbs	8-9-5	1	31
Independent:			
Bruner	10-9-5	3	76
Sullivan	10-9-5	1	10
Independent-Darby:			
Knapp	8-9-5	2	383
Independent-Margay:			
Gaines	11-9-5	3	45
Magnolia:			
Bryant	9-9-5	2	22
Cowden	4-9-5	1	20
Dixon	12-9-5	1	11
Edmundson	3-9-5	1	2
Germany, M.	30-9-5	1	6
Gillian	13-9-5	3	1,002
Homsley	11-9-5	3	5
Hyde	13-9-5	2	56
Ingram	10-9-5	1	4
Lena	10-9-5	3	30
Seay	12-9-5	9	112
Simpson	10-9-5	4	121
Sparks	11-9-5	6	55
Sullivan	12-9-5	2	69
Mid-Continent:			
McKinley	9-9-5	3	15
Rogers	5-9-5	5	651
Mid-Kansas:			
Anderson	14-9-5	1	25
Phillips:			
Dunaway	14-9-5	1	17
Reade	8-9-5	2	705
Prairie:			
Davis	13-9-5	3	305
Graham, C.	3-9-5	1	Off
Graham, O.	10-9-5	4	505
Stidham	11-9-5	9	173
Prairie-Skelly:			
Campbell	6-9-6	7	1,447
Prairie-Whitney:			
Harjo	24-9-5	1	Off
Shaffer:			
Clark	1-9-5	2	134
Shell:			
Bayless	17-9-5	1	8
Hearn	13-9-5	1	29
Spencer	12-9-5	2	342
Sinclair:			
Alexander	36-10-5	1	515
Foreman	18-9-5	1	12
Sango	2-9-5	4	261
Sinclair et al:			
Foreman	18-9-5	1	100
Skelly:			
Mayes	1-9-5	4	217
Sheppard	6-9-6	4	1,375
Spencer	12-9-5	1	193
Skelly-Atlantic:			
Cherry	6-9-6	4	208
Lottie	6-9-6	3	51
Skelly-Prairie:			
Varnum	5-9-6	2	367
Superior:			
Ingram	1-9-5	2	235
Songster	8-9-5	2	680
Walker	2-9-5	2	602
Superior-Shaffer:			
McKay	36-10-5	1	258
Texas:			
Anderson	2-9-5	8	88
Brown	10-9-5	8	56
James	6-9-6	2	102
Rogers	5-9-5	5	22
Wilmot	10-9-5	6	65
Tidal:			
Walker	35-10-5	2	465
Watkins	9-9-5	7	776
Twin State:			
Anderson	22-9-5	1	5
Barker	12-9-5	2	15
Hearn	2-9-5	2	45
Magruder	7-9-5	1	150
Total		294	28,104

East Earlsboro Pool

Amerada-Dixie:			
Fullerton	19-9-6	2	1,780
Scott	19-9-6	1	1,721
Sullivan	17-9-6	4	1,007
Barnsdall:			
Gilliam	13-9-5	1	25
Noble	18-9-6	5	489
Burke-Greis-Red Bank:			
Fixico	17-9-6	3	1,440
Carter:			
Campbell	20-9-6	1	2,830
Chowning	19-9-6	1	437
Harber	7-9-6	3	1,523
Wrightsman	19-9-6	4	3,206
Continental:			
McGuire	24-9-5	1	630
Gypsy:			
Maley	20-9-6	4	1,268
Noble, B.	18-9-6	4	1,948
Gypsy-Devonian:			
Payne	18-9-6	12	4,903
Independent-Atlantic:			
Fixico, L.	20-9-6	3	2,031
Magnolia:			
Anderson, A.	18-9-6	12	3,489
Anderson, D. W.	18-9-6	4	2,008
Anderson, Panos	18-9-6	3	305
Moore	24-9-5	3	826
Mid-Continent:			
McDaniels	7-9-6	1	74
Minnehoma:			
Noe	17-9-6	5	2,178
McMan:			
Jones	20-9-6	1	716
Prairie:			
Baker	24-9-5	5	423
Calkins	17-9-6	3	682
Raitman	18-9-6	3	1,091
Wisner	18-9-6	1	Off
Prairie-Slick:			
Wilson	8-9-6	1	Off
Producers & Refiners:			
Jefferson	19-9-6	3	2,583
Shell:			
Hopper	19-9-6	8	10,764
Sinclair:			
Miller	24-9-5	1	380
Nichols	19-9-6	8	3,433
Texas:			
Magruder	19-9-6	6	2,662
Tidal:			
Lasley	19-9-6	1	596
Tidal et al:			
Harjo	20-9-6	1	50
Total		119	57,498

Seminole Pool

Amerada:			
Fixico	23-9-6	2	36
Killings	25-9-6	4	172
Rentie	23-9-6	3	270
Atlantic:			
Cudjo	35-9-6	3	265
Barnsdall:			
Carter	24-9-6	6	117
Henry	14-9-6	2	229
Jones	34-9-6	4	294
Carter:			
Carter, B.	24-9-6	2	25
Carter, F.	23-9-6	3	79
Creamer	34-9-6	1	4
Cudjo, R.	35-9-6	4	90
Cudjo, W.	34-9-6	1	52
Gilliland	27-9-6	1	94
Grisso	23-9-6	4	65
Grisso, M.	15-9-6	1	190
Killing, G. F.	14-9-6	4	34
Killing, M. E.	23-9-6	12	3,035
Knapp	13-9-6	1	28
Lukes	27-9-6	5	743
Pounder	34-9-6	2	123
Simpson	35-9-6	2	102
Strothers	34-9-6	4	323
Vierson	23-9-6	1	22
Carter et al:			
Sanford, C.	16-9-6	1	164
Wisner, C.	16-9-6	1	59
Darby:			
Carter, J.	24-9-6	4	34
Fixico	26-9-6	7	1,044
Harjo, D.	25-9-6	1	32
Harjo, T.	23-9-6	3	35
Empire:			
Gross	25-9-6	1	18
Wilson	34-9-6	2	151
Gypsy:			
Butler	36-9-6	4	146
Carter	24-9-6	8	592
Cudjo, T.	34-9-6	4	561
Fixico	26-9-6	7	53
Harjo	25-9-6	3	58
Wolfe	26-9-6	4	453
Independent:			
Butler	35-9-6	3	239
Fixico, P.	23-9-6	3	268
Harjo	25-9-6	2	6
Independent-Garland:			
Fixico, T.	26-9-6	5	154
Independent-Inter-Ocean:			
Jones	26-9-6	4	305
I. T. I. O.:			
Allen	25-9-6	2	17
Bowlegs	26-9-6	12	1,592
Goodin	23-9-6	3	123
Harjo	23-9-6	3	29
James	24-9-6	2	26
Reed	24-9-6	1	6
Kingwood-Shell:			
Harjo	22-9-6	3	312
Magnolia:			
Boren	2-8-6	1	2
Franks	25-9-6	3	190
Mid-Continent:			
Rentie	14-9-6	9	365
Tayeche	24-9-6	5	111
Phillips:			
Strothers	27-9-6	2	57
Prairie:			
Cudjo, R.	35-9-6	3	462
Franks	35-9-6	6	563
Giblet	35-9-6	3	1,115
Gross	25-9-6	5	20
Mason	36-9-6	1	42
Spencer	13-9-6	1	5
Strothers	27-9-6	8	862
Tiger	1-8-6	1	18
Pure:			
Strothers	26-9-6	17	3,107
Strothers "B"	36-9-6	4	98
Strothers "C"	34-9-6	1	249
Shell:			
Harber	22-9-6	1	41
Lasley	22-9-6	2	14
Sinclair:			
Carter, J.	13-9-6	2	15
Cudjo "A"	35-9-6	6	462
Cudjo "B"	35-9-6	4	542
Dixey	22-9-6	2	338
Fixico	23-9-6	4	240
Superior:			
Cudjo, B.	35-9-6	4	60
Noble	15-9-6	1	2
Texas:			
Mayhue	14-9-6	2	364
Strothers	2-8-6	1	35
Turman:			
Cudjo	35-9-6	4	438
Grisso	35-9-6	1	185
Jones	34-9-6	4	220
Total		273	23,095

East Seminole Pool

Barnsdall:			
Keypaya	7-9-7	1	14
Blackwell:			
Jonah	15-9-7	1	122
Continental:			
Boring	17-9-7	1	40
Johnson	18-9-7	3	982
Continental-Sinclair:			
Perry	18-9-7	3	475
Devonian:			
Harjo	18-9-7	1	7
Gypsy:			
Harjo	18-9-7	2	450
Magnolia:			
Drewery	18-9-7	2	30
Prairie:			
Stubbs	18-9-7	3	269
Shaffer:			
Hagler	19-9-7	1	5
Sinclair:			
Coody, B.	18-9-7	3	380
Coody, D.	17-9-7	1	30
Johnson, G.	18-9-7	1	129
Johnson "B"	18-9-7	1	75
Thompson "B"	18-9-7	2	1,519
Sinclair-Continental:			
Warrior, J.	17-9-7	2	35
Sinclair-Gypsy:			
Okfuskee	18-9-7	1	145
Sinclair-Phillips:			
Warrior, S.	17-9-7	2	58
Total		31	4,765

Searight Pool

Amerada:			
Johnson	4- 9-6	1	17
Nicey	3- 9-6	1	Off
Strothers	3- 9-6	2	82
Barnsdall:			
Jackson	5- 9-6	2	15
Johnson	22-10-6	1	15
Burke-Greis et al:			
Nevins	32-10-6	2	502
Varnum	32-10-6	1	118
Carter:			
Davis	4- 9-6	2	132
Frazier	3- 9-6	5	90
Kiker	2- 9-6	1	12
Mandler	3- 9-6	2	7
Scott	26-10-6	1	10
Amerada (Comm.)	11- 9-6	1	15
I. T. I. O. (Comm.)	11- 9-6	1	210
Mayhue (Comm.)	11- 9-6	3	964
McMan (Comm.)	11- 9-6	1	126
Skiff (Comm.)	10- 9-6	1	27
Slick (Comm.)	11- 9-6	2	350
Stewart (Comm.)	10- 9-6	1	154
Strothers (Comm.)	11- 9-6	2	381
Gypsy:			
Cudjo	4- 9-6	3	282
Nevins	32-10-6	2	358
Saloche	31-10-6	1	44
Magnolia:			
Varnum	32-10-6	3	30
Varnum, W. F.	5- 9-6	1	322
Mid-Continent:			
Grayson	34-10-6	4	23
Saloche	33-10-6	5	277
Mid-Continent-Homaokla:			
Nevins	32-10-6	4	401
Papoose:			
Marks	32-10-6	1	172
Pine, W. B.:			
Lulu	4- 9-6	1	15
Prairie:			
Cannon	33-10-6	1	1
Carter, J.	10- 9-6	1	1
Hauck	33-10-6	1	1
Hurford	32-10-6	1	16
Kinkaid	33-10-6	2	30
Weimer	22-10-6	1	8
Pure:			
Aldridge	3- 9-6	3	586
Shell:			
Crump	32-10-6	1	Off
Strothers	3- 9-6	3	22
Sinclair:			
Polly	3- 9-6	4	1,070
Superior:			
Varnum	4- 9-6	1	15
Texas:			
Fleet	4- 9-6	1	1
Twin State:			
Varnum	4- 9-6	2	100
Wilcox:			
Chupco	4- 9-6	6	182
Total		86	7,184

PRODUCTION OF ST. LOUIS POOL

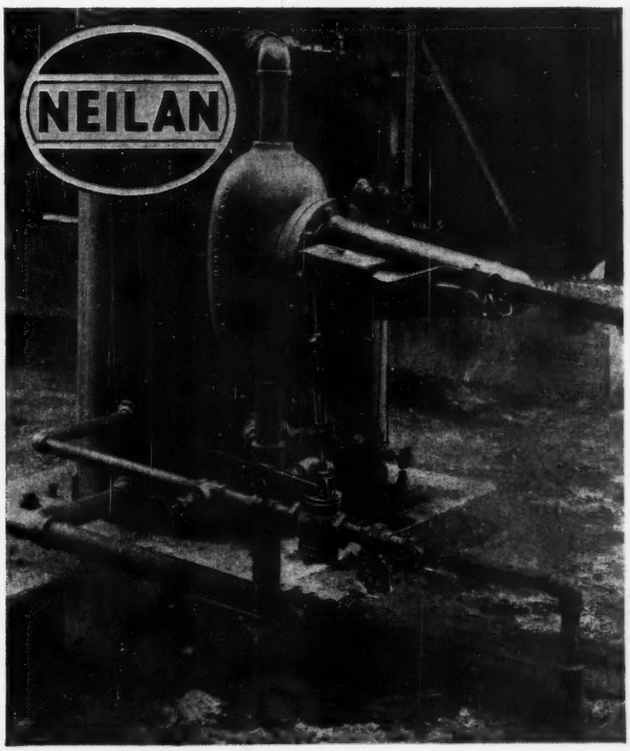
Average daily production for the St. Louis Pool for the week ending January 27:

	S.T.R.	Wells	Prod.
Amerada:			
Richardson	16-7-4	2	72
Atlantic et al:			
Bass	9-7-4	1	109
Bourassa	10-7-4	1	75
Burke	16-7-4	3	350
Milburn	15-7-4	1	76
McGee	4-7-4	1	540
Barnsdall:			
Stahl	30-7-5	3	202
Blackwell:			
Cherry	25-7-4	3	292
Lewis	24-7-4	2	24
British-American:			
Coley	24-7-4	2	135
McGee	23-7-4	5	115
Carter:			
McGee	26-7-4	1	10
Darby:			
Bettis	21-7-4	1	105
Harber	23-7-4	1	22
Nixon	9-7-4	2	177
Youngblood	16-7-4	4	240
Darby-Atlantic:			
Cardwell	15-7-4	1	217
Empire:			
Bettis	17-7-4	1	78
Jackson	36-8-4	1	175
State	36-7-4	1	44
Gypsy:			
Bruno	25-7-4	3	50
Collins	25-7-4	4	452
Dodson	26-7-4	4	37
Green	17-7-4	6	2,982
Johnson	29-7-5	1	28
LeClair	23-7-4	4	1,038
Rosemond	26-7-4	4	263
Stahl	30-7-5	5	43
Gypsy et al:			
Johnson, W.	7-7-4	1	27
Healdton:			
Hines	17-7-4	1	26
Home Gas Co.:			
St. Louis	14-7-4	1	254
Houston Oil:			
Wyatt	17-7-4	5	652
Independent:			
Barrow	1-7-4	3	387
Blandin	30-7-5	5	841
Youts	19-7-5	8	1,406
Independent-Darby:			
Brown	14-7-4	2	16
Carson	23-7-4	1	Off
Davis	15-7-4	2	33
Freid	23-7-4	2	34
Jordon	10-7-4	1	20
LeClair	23-7-4	1	28
Pappan	16-7-4	3	299
Pillar	15-7-4	1	5
Standridge	14-7-4	3	26
Wallace	14-7-4	4	64
Independent et al:			
Hamby	14-7-4	2	7
Wax	30-7-5	1	23
Independent-Mid-Kansas:			
Asher	3-7-4	1	Off
Weldfelt	2-7-4	2	534
Independent-Range:			
Null	35-8-4	2	188
Independent-Skelly:			
James	17-7-4	2	72
Independent-Westland:			
Booze	9-7-4	1	31
Rhodd	16-7-4	3	387
I. T. I. O.:			
Brandenburg	35-8-4	2	880
McGee	26-7-4	1	163
Shobe	35-8-4	4	211
Weams	21-7-5	1	58
Weldfelt	2-7-4	3	1,001
I. T. I. O.-Sinclair:			
Woodard	18-7-5	1	30
Keister-Manning:			
Kelly	2-7-4	3	399
Magnolia:			
Anderson	1-7-4	1	5

(Continued on Page 108)

Even the lightest liquids easily operate

NEILAN *Ball-Bearing* LIQUID LEVEL CONTROLLERS



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The greatest single factor contributing to the frictionless operation of Neilan Controllers is the use of stainless steel ball bearings in both the float chamber and the balanced valve — a feature which enables these controllers to precisely maintain the desired levels in liquids of high gravity offering little buoyancy to the float.

Get the complete story of these perfected Neilan Liquid Level Controllers — in the new Neilan catalog—mailed on request.

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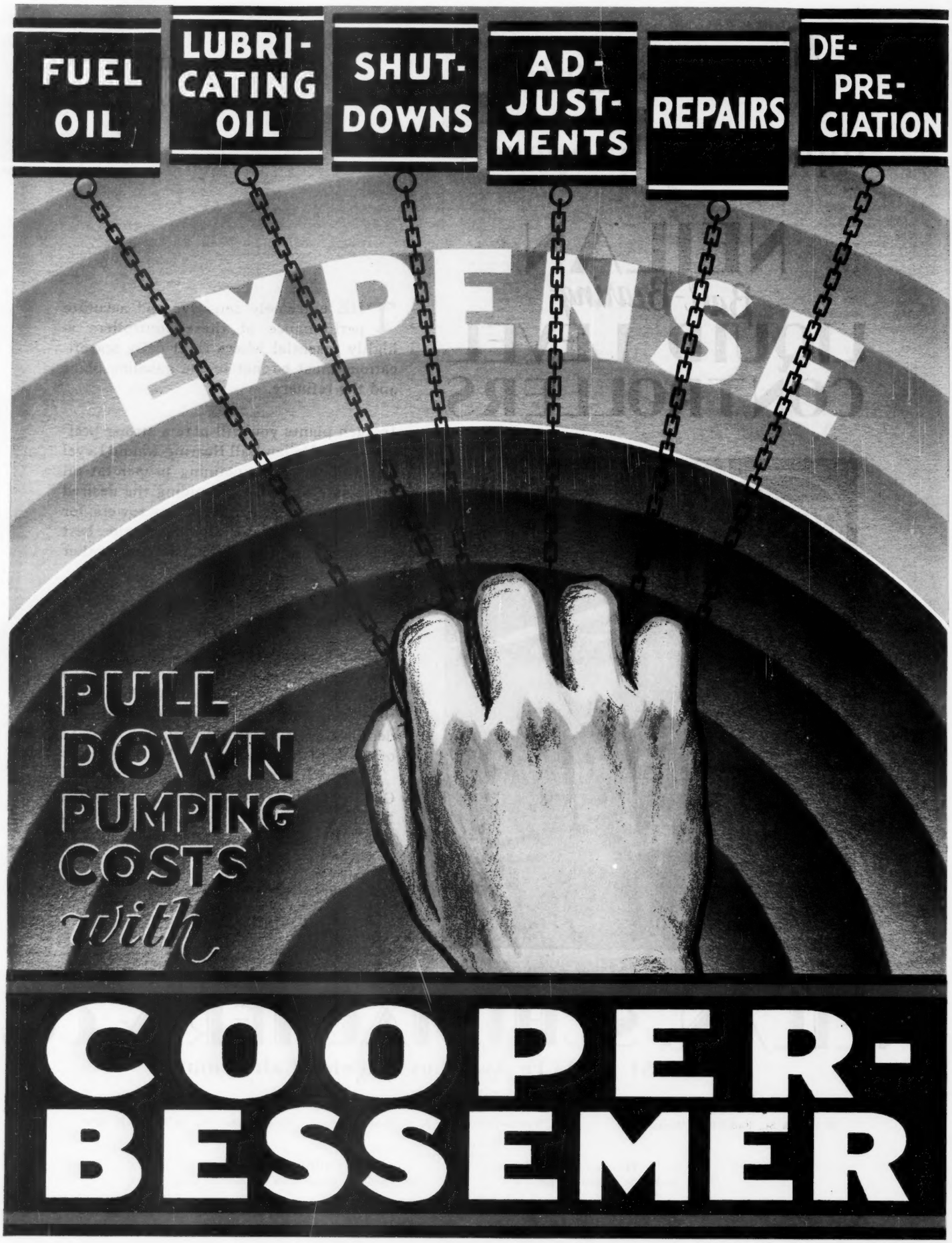
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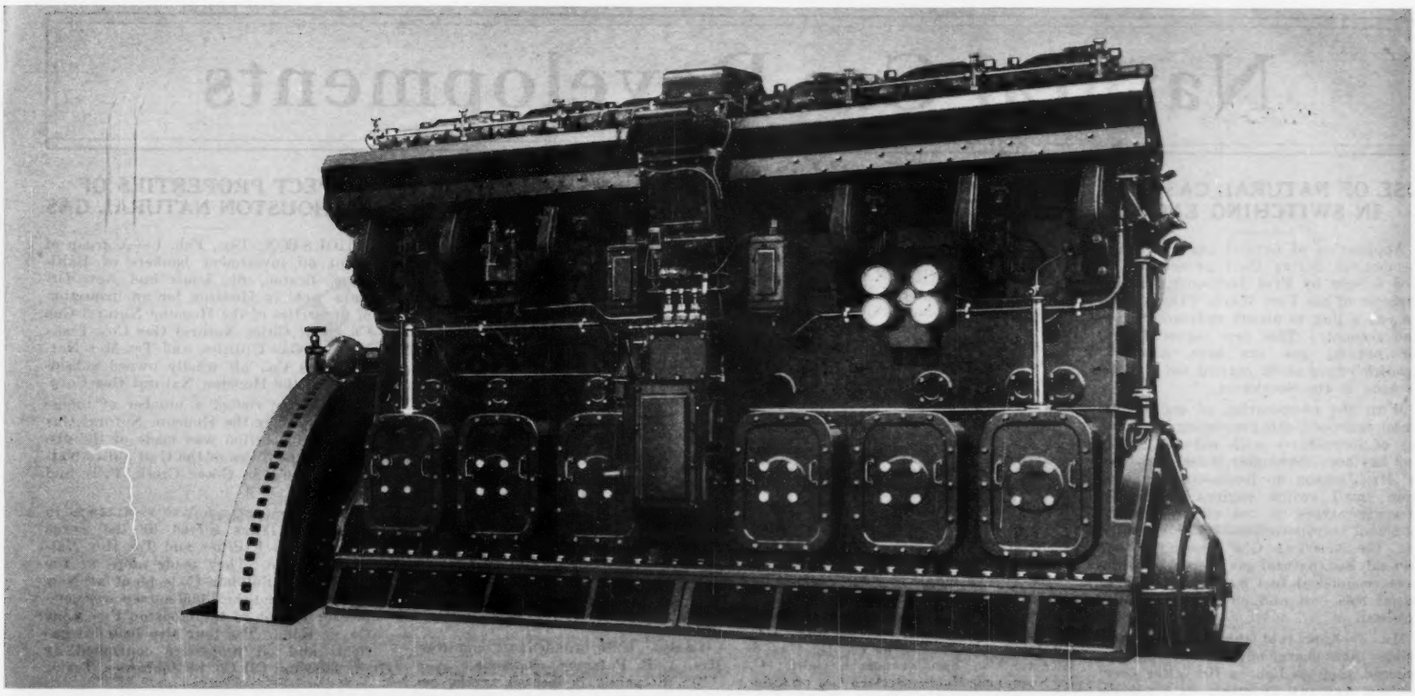

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LEAVE it to Cooper-Bessemer to pull down oil line pumping costs! No engine builder has a greater knowledge of the wide fluctuations in load, the jerks and shocks, the variations in pressure, the high cost of shut-downs.

Here is how Cooper-Bessemer Diesels pull down six items of pumping expense: FUEL OIL—solid injection of right amount of low grade oil directly into simple, efficient combustion chamber; four cycle operation. LUBRICATING OIL—force-feed fresh oil to cylinders without waste; force-feed filtered oil to main bearings, crank bearings and wrist pins. No exhaust gases in crank case. SHUT-DOWNS—engine designed, built and sold with ample capacity for pumping load. ADJUSTMENTS—all parts easily accessible for quick adjustment. REPAIRS—use of special, high grade materials plus adequate exhaust, cooling and lubrication greatly lengthens life of cylinder heads, liners, crank shaft, bearings and rings. ABILITY TO CARRY LOAD adequate valve area, plus complete cooling and thorough lubrication insure full load carrying ability at all times.

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DIESEL POWER

Natural Gas Developments

USE OF NATURAL GAS IN SWITCHING ENGINES

Application of natural gas to railway locomotives during their preheating period is seen by Fred Jackson, industrial engineer of the Fort Worth (Texas) Gas Co., as a link to attach railroads to gas line accounts. This new industrial use for natural gas has been developed through experiments carried out by Mr. Jackson in the Southwest.

With the co-operation of one of the major railroads, this preheating or steaming of locomotives with natural gas as fuel has been thoroughly tested and tried by Mr. Jackson on locomotives ranging from small switch engines and small passenger types to the giants used in long-haul transportation service. In each test, the American Gas Association has been advised, natural gas proved to be the most economical fuel both on a basis of initial fuel cost and on time and labor involved.

Mr. Jackson said that when a fire-builder takes charge of a locomotive in the railroad shop to light a fire after overhauling, and get up steam in readiness for the hostler to take the engine out of the roundhouse, he frequently encounters a sluggish fuel oil which has cooled and settled at the bottom of the tank. This, with the presence of water in the fuel, variance of pressure of the atomizing medium whether steam or compressed air, or an occasional slug of water coming through with it, causes the fuel oil to steam down into the pit and either burn out at that point, adding to the fuel loss and already heavy smudge in the roundhouse, or necessitates it washing away to become a fire menace down the line.

In cool weather this trouble is magnified, it being a common occurrence for the fire to go out after lighting in a cold furnace, and allow several barrels of oil to run down the pit before being detected by the fire-builder.

In this potential locomotive load, Mr. Jackson visualizes such volume of consumption as to entitle the railroads to the advantage of low industrial rates.

A roundhouse accommodating 10 engines per 24-hour day may be depended upon for a load of approximately 2,500,000 feet of natural gas each month, in Mr. Jackson's opinion; larger plants using more in proportion, and this load is entirely separate from the many other uses to which natural gas is put in railroad shop work.

In line with these experiments, Mr. Jackson plans to investigate the possibility of securing the stationary boiler and shop business on the strength of his success with locomotive firing.

INDUSTRIAL GAS SALESMANSHIP

A course in industrial gas salesmanship now is available to the entire gas industry through the American Gas Association. This course is being offered through the managing committee of the industrial section of the American Gas Association, and it is said to present a unified, practical procedure, designed to increase industrial gas sales. It is available to every gas executive and industrial gas salesman, who is interested in adding selling skill to his engineering knowledge.

TO ADDRESS NEW ENGLANDERS

B. J. Mullaney, president of the American Gas Association, will be one of the principal speakers at the fourth annual meeting of the New England Gas Association, at the Hotel Statler, Boston, Mass., February 19 and 20. He will discuss "Immediate Prospects of the Gas Industry."

WESTERN NATURAL GAS CONVENTION TO BE AT NEW ORLEANS, MAY 5-8

NEW YORK, Feb. 3.—E. J. Stephany, secretary of the Natural Gas Department of the American Gas Association, announces that the next convention of the natural gas industry will take place at New Orleans, La., May 5 to 8. Headquarters will be at the Roosevelt Hotel, where business sessions will be held.

While this convention will be known as "The Western Natural Gas Convention" it will be open to all natural gas men. The program will feature outstanding problems and subjects of interest to the industry, although there will be no exhibit of appliances.

The following committees are in charge of the convention:

Arrangements and Entertainment Committee—A. B. Paterson, New Orleans Public Service, Inc., New Orleans, La., chairman; W. S. Yard, Pacific Gas & Electric Co., San Francisco, Calif.; C. N. Stannard, Public Service Co. of Colorado, Denver, Colo.; O. Christopher, Montana Petroleum Co., Baker, Mont.; N. K. Moody, Prairie Oil & Gas Co., Independence, Kans.; T. R. Weymouth, Oklahoma Natural Gas Corp., Tulsa; J. R. Munce, Louisiana Pipe Line Co., Shreveport, La.; R. C. Hoffman, Jr., Southern Cities Public Service Co., Atlanta, Ga.; and Wallace Blocker, Houston Natural Gas Co., Houston, Tex.

Program Committee—N. C. McGowen, Louisiana Gas Co., Shreveport, La.; H. L. Montgomery, Empire Gas & Fuel Co., Bartlesville, Okla.; T. J. Strickler, Kansas City Gas Co., Kansas City, Mo.; L. Fitzpatrick, Utah Gas & Coke Co., Salt Lake City, Utah; George Wehrle, Public Service Co. of Colorado, Denver, Colo.; W. A. Dunkley, Memphis Power & Light Co., Memphis, Tenn.; A. E. Merchant, New Orleans Public Service, Inc., New Orleans, La.; A. C. Howard, United Engineering Co., Houston, Tex.; and F. L. Chase, Lone Star Gas Co., Dallas, Tex.

Ladies Entertainment Committee—Mrs. A. B. Paterson, chairman.

Mr. Stephany is located at the headquarters of the Natural Gas Department, Allen Building, Dallas, Tex., having recently been transferred from Pittsburgh, Pa.

ALBUQUERQUE FRANCHISE

DENVER, Colo., Feb. 1.—Five companies submitted applications to the city council of Albuquerque, N. Mex., for franchises to supply the city with natural gas. These were returned to the bidders to be redrawn on a uniform basis and three were returned under the new specifications. These were the applications of the Southern Union Gas Co., which proposes to pipe natural gas from the San Juan Basin, in the northwestern part of the State; A. T. Woods and associates, representing the Pecos Valley Gas Co., which proposes to pipe gas from Lea and Eddy Counties; and the third was that of Virginia-Mex Gas & Oil Co. Bids of the Woods and Southern Union groups were approximately the same and provided for 90 cents for the first 400 feet and 10 cents per 100 for the next 600 feet with sliding scale for larger quantities. The Virginia-Mex bid was a flat rate of 80 cents per 1,000 feet for the first three years down to 65 cents in the third three-year period.

GAS FOR MESA, MONTANA

The Fultom Petroleum Corp., of Seattle, Wash., which has considerable production in Montana, has been granted a franchise by the city of Grand Junction in Mesa County to pipe gas to that city from the Garmesa Dome north of Fruita. Several wildcats have been drilled on the Garmesa Dome, some of which showed large volumes of gas with considerable carbon dioxide. The plans of the company are said to include supplying some new industries with gas to manufacture dry gas and other carbon dioxide products and to use the sweet gas for domestic purposes.

GIVES LIFE FOR SERVICE

An employe of the Oklahoma Natural Gas Corp. lost his life and many others worked in the open night and day throughout the recent extremely cold weather in order to maintain adequate gas pressure in the distribution mains of the company. Ed Beasley, age 31, was thrown 100 feet by an explosion while he was turning on the gas flow near a gas well in the south Oklahoma City Field.

NATURAL GAS CONFERENCE

The first natural gas regional sales conference, which comprises the States of Pennsylvania, Ohio, West Virginia, Maryland, New York and Kentucky, will take place at the Hotel Schenley, Pittsburgh, Pa., February 10 and 11, under the auspices of the American Gas Association.

B. J. Mullaney, president of the American Gas Association, will be the principal speaker at the conference luncheon on the opening day. Others who will be heard are as follows: Reid Cameron, Pittsburgh, Pa.; E. A. Munyan, Cincinnati, Ohio; F. C. Mackey, Chicago, Ill.; E. C. Weston, Columbus, Ohio; R. C. Polk, Pittsburgh, Pa.; H. O. Loebell, New York, N. Y.; Karl Emmerling, Cleveland, Ohio; E. W. Esslinger, Cincinnati, Ohio; George L. Scofield, Brantford, Ontario, Canada; V. L. Black, Pittsburgh, Pa.; and A. J. Peters, New York, N. Y.

PRESIDENT MULLANEY COMING

B. J. Mullaney, vice president of the Peoples Gas Light & Coke Co. of Chicago and president of the American Gas Association, will address the twelfth annual convention of the Oklahoma Utilities Association at Tulsa March 12. Mr. Mullaney is well known throughout the gas and electric industries of the United States. The convention committee of the association met in Tulsa recently and made all preliminary arrangements for the convention to be held in Tulsa March 11, 12 and 13. About 1,100 representatives of the electric light and power, gas, telephone, electric railway and manufacturing industries are expected to attend.

MENARD, TEX., FRANCHISE

City officials of Menard, Tex., are withholding action for the present on three applications for a franchise to supply the town with gas from Barnett's No. 1 Callan, 8 miles northeast of Menard in Section 1, B.S.&F. Survey. The well is good for 2,000,000 feet of gas per day from the present depth of 1,268 feet. The city officials want to make sure the gas will hold up in the well before granting any franchise.

INSPECT PROPERTIES OF HOUSTON NATURAL GAS

HOUSTON, Tex., Feb. 1.—A group of about 30 investment bankers of Baltimore, Boston, St. Louis and New Orleans were in Houston for an inspection of properties of the Houston Natural Gas Co., Gulf Cities Natural Gas Co., Texas Natural Gas Utilities, and Tex-Mex Natural Gas Co., all wholly owned subsidiaries of the Houston Natural Gas Corp.

The party visited a number of industries served by the Houston Natural Gas Co. An inspection was made of the distribution facilities of the Gulf Cities Natural Gas Co. in Goose Creek, Pelly and Baytown.

The entire party left to visit towns in Southwest Texas served by the Texas Natural Gas Utilities and Tex-Mex Natural Gas Co. They made stops at the Texas Gulf Sulphur Co.'s plant at New Gulf, Tex., and the 7,000-horsepower compressor station of the Houston Pipe Line Co. at Edna. The tour also included gas fields and oil properties controlled by the Houston Oil Co. in Southwest Texas.

VEGREVILLE GAS FRANCHISE

CHATHAM, Ontario, Feb. 1.—A proposal to grant a natural gas franchise to the Vegreville Natural Gas Co. will be submitted to the city electors of Vegreville, Alberta, at the annual election on February 10. The franchise gives the company an exclusive right to sell natural gas within the city for domestic and industrial purposes. The rate is 45 cents, less 10 per cent, but subject to regulation by the Alberta Public Utilities Commission. Under the agreement the company will test the gas reserve set aside for the city of Vegreville by the Dominion government some years ago, and the company is required to complete its geological survey and start actual drilling within four months of the completion of the agreement; and, on striking adequate production, to at once proceed with the construction of pipe line and distributing system. Should oil be struck on the Vegreville acreage the town is to receive 50 per cent royalty. Dr. J. A. Allen is consulting geologist and J. A. H. Church of Edmonton, consulting engineer for the company.

GAS SALES CONFERENCE

Samuel Insull, Jr., president of the Midland United Co., will be the first speaker at the 1930 Midwest Regional Gas Sales Conference, sponsored by the commercial section of the American Gas Association, at the Hotel Sherman, Chicago, Ill., February 13 and 14. Besides Mr. Insull, others invited to speak include W. H. Hodge, H. M. Byllesby Co., Chicago; Fred Karr, St. Joseph Gas Co., St. Joseph, Mo.; L. R. Parker, Allied Power & Light Corp., Jackson, Mich.; H. B. Johns, The Peoples Gas, Light & Coke Co., Chicago; John K. Swanson, Minneapolis Gas Light Co., Minneapolis, Minn.; and Jack Torbert, Wyandotte County Gas Co., Kansas City, Mo.

CALGARY GAS CONSUMPTION

CHATHAM, Ontario, Feb. 1.—Severe winter temperatures, approximating 40 below zero, have resulted in a new peak of natural gas consumption for the city of Calgary and other towns on the Canadian Western Natural Gas Co.'s system in southern Alberta. Maximum deliveries at the rate of 65,000,000 feet a day are reported in the coldest weather. In moderate winter weather the rate is about 35,000,000 feet. Despite the heavy demand, supply and pressure were well maintained.

EVERYWHERE! the Trend is Toward

ALLIS-CHALMERS TEXROPE DRIVES

THE PERFECT TRANSMISSION — FOR EVERY PURPOSE ··

IN every industry, men are turning to Texrope as the drive that requires practically no maintenance . . . that assures continuous operation . . . that is unaffected by dirt or water. Today over 70,000 of these drives are in satisfactory service. In 1929 Texrope sales were nearly double the volume of 1928.

Where smooth starting and lack of vibration are essential to better work, Texrope has won instant approval. Particularly is this true in machine shops, textile mills, printing houses, woodworking plants and oil industry.

In plants where cleanliness is essential Texrope offers an outstanding advantage. You can turn a hose on Texrope without harming it or affecting its efficiency. Texrope requires no lubrication . . . consequently there is no oil or grease to guard against.

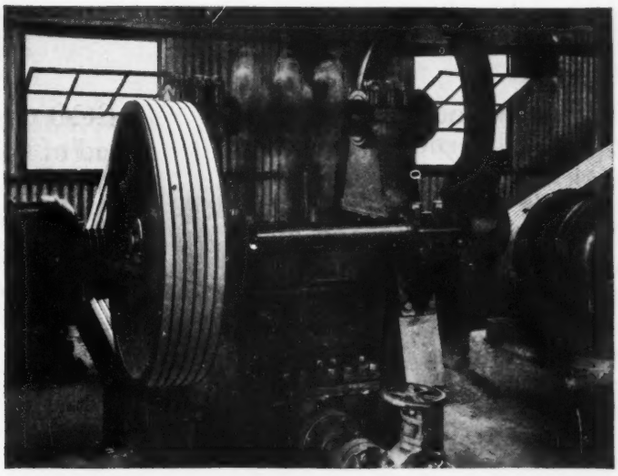
You, too, can cut costs and improve production with Texrope Drives. Try one where you've been having the most trouble. Texrope will sell itself by its superb performance.

Note These Advantages Offered by Texrope

Short centers. Always silent. Slipless. Unaffected by moisture or dirt. Vibrationless. Smooth starting, acceleration and running. Shock absorbing. Continuous operation. 98.9% efficient. Texrope belts and sheaves are carried in stock at points from which prompt shipment can be made to any part of the country. Write for a copy of bulletin 1228-K. It shows Texrope Drives operating in many industries.

ALLIS-CHALMERS MANUFACTURING CO., (*Texrope Division*)
MILWAUKEE *Specialists in Power Machinery Since 1846* WISCONSIN

In the oil fields Texrope Drives have enjoyed tremendous success. They are used on drilling rigs, pumps and a variety of operations. Climatic conditions do not affect Texropes.



Nor does sand, mud or water decrease their efficiency. The illustration shows an Allis-Chalmers 50 h. p. motor and Texrope Drive operating a plunger pump for the Boline Pipe Line Co., Logan County, Oklahoma.

Illustrated here is a 136' IDECO Steel Derrick. This is the first steel derrick of this height developed for deep well drilling and is one of a number recently furnished to the California fields.

IDECO AND

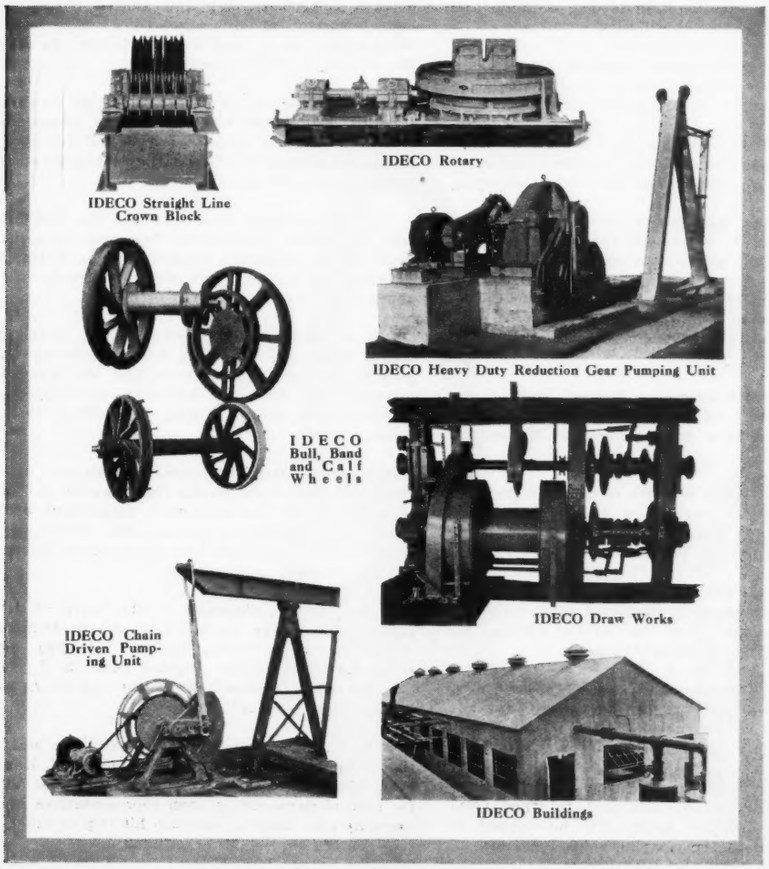
THE splendid service and economies obtained through the use of IDECO Steel Derricks over a period of years has made the name "IDECO" synonymous with durability and quality. In reaching this goal, research, experiments and years of usage in the oil fields of the world have been combined to produce derricks and rigs of the highest possible working efficiency.

IDECO derricks have constantly kept ahead of the increasing demands of the oil industry and are offered to you today in a wide variety of sizes and weights suitable for any drilling or pumping requirement. They have never been successfully imitated.

Worthy mates to these towers of steel

THE INTERNATIONAL DERRICK & EQUIPMENT CO.

COLUMBUS, OHIO . . . . . LOS ANGELES, CALIFORNIA


IDECO Straight Line Crown Block
IDECO Rotary
IDECO Heavy Duty Reduction Gear Pumping Unit
IDECO Bull, Band and Calf Wheels
IDECO Draw Works
IDECO Chain Driven Pumping Unit
IDECO Buildings

Crown Blocks, Rotaries, Drawworks, Wheels, Pumping Units and Standard Steel Buildings are a few of the many items of IDECO equipment offered to the Oil Industry. Definite savings and economies can be obtained by standardizing on IDECO equipment.

DERRICKS
RIG EQUIPMENT

are the Boykin Rotaries, Drawworks, Traveling and Crown Blocks, with their history of enviable accomplishments, which have been added to the line of IDECO equipment and offered for your consideration.

The new pumping units—The IDECO Chain Rig and the IDECO Geared Unit have been developed for the deep well pumping requirements, incorporating many features of unusual merit and offer economies that have a direct bearing upon your production costs.

Every product manufactured by IDECO is guaranteed and can be depended upon to give economical, trouble-free, uninterrupted service. Write today for further information.

Plants: Columbus, Delaware, Ohio; Houston, Beaumont, Texas; Torrance, California. *Sales Offices:* Columbus, Ohio; New York City, N. Y.; Detroit, Michigan; Tulsa, Oklahoma; Fort Worth, Houston, Texas; Shreveport, Louisiana; Wichita, Kansas; Denver, Colorado; Los Angeles, California; Maracaibo, Venezuela. *Warehouses and Yards:* Columbus, Ohio; Tulsa, Seminole, Tonkawa, Maud, Sasakwa, Allen, Oklahoma City, Oklahoma; Wichita Heights, Kansas; Bakersfield, Torrance, California; Houston, Big Spring, Odessa, Pyote, Borger, Mexia, Luling, Grand Saline, Wichita Falls, Orange, Seguin, Texas; Shreveport, Lake Charles, Oil City, Louisiana; El Dorado, Smackover, Arkansas.

Export Offices—74 Trinity Place, New York City; Columbus, Ohio; Houston, Texas; Los Angeles, California.

MEN KNOWN IN OILDOM

C. E. Yager

C. E. Yager, head of the land and geological departments of the Texas Pacific Coal & Oil Company in Fort Worth, Tex., is one of the youngest men holding such a responsible position. He worked his way up to it from the job of detail geologist.

Mr. Yager was born in Stillwater, Okla., his family later moving to Abilene, Tex., where he attended the public and high schools. In 1922 he received his A. B. degree in geology from the University of California and soon afterward he went to work for the Texas Pacific Company in Oklahoma, doing general geological work.

For six months in 1923-24 Mr. Yager worked as geological engineer for the Freeport Sulphur Company in Freeport, Tex. On completing his work for that concern he returned to the Texas Pacific company in Fort Worth as assistant to the head of the land and geological departments, until October 1, 1929, when he was promoted to the head of the departments following the resignation of David Donoghue, formerly in charge.

Mr. Yager married Miss Gilcy Rennie in 1924. He is secretary and treasurer of the Fort Worth Geological Society.

PERSONAL PARAGRAPHS

Craig Morton, independent operator of Albany, Tex., has returned home from a business trip to Tulsa.

* * *

G. M. Whelan has been transferred to New York as vice president of the Pan American Petroleum Corporation.

* * *

Leland Clark has resigned from the International Supply Company to join the Walworth Company as field salesman with headquarters at Oklahoma City, Okla.

* * *

R. C. Holmes, president of The Texas Company, has been in Los Angeles, Calif., in company with a number of other officials on an inspection tour of California fields.

* * *

G. A. Clarke, formerly with Emsco Derrick & Equipment Company, is now with the machinery department of the International Supply Company, with headquarters in Tulsa.

* * *

Knox L. Garvin, district manager for the Wirt Franklin Petroleum Corporation and president of the Dunmar Oil Company, was re-elected president of the Duncan, Okla., Chamber of Commerce for 1930 at the annual meeting of directors.

D. W. Ohern, geologist of Oklahoma City, Okla., has been on a vacation trip to San Antonio and Southwest Texas.

* * *

Byron Rife, independent operator of Abilene, Tex., has just returned from a combined business and pleasure trip to Los, Angeles, Calif.

* * *

Vernon F. Taylor, president of the Peerless Oil & Gas Company, and a director of the Continental Oil Company, is spending the winter in California.

* * *

Charles Reeder, manager of the oil equipment department of A. Y. McDonald Company, Dubuque, Iowa, is spending two months on the Pacific Coast.

* * *

H. G. Officer, of the Amerada Petroleum Corporation, Tulsa, has been spending a couple of days in Fort Worth, Tex., on business at the company's offices.

* * *

R. S. King and Lawrence Everett Hults, independent operators of Fort Worth, Tex., have returned home from a business trip to Williamson County, Texas.

* * *

John R. Blake, who recently returned to Petrolia, Ontario, from the Borneo oil fields, is reported convalescing from a serious operation at the C. E. Englehart Hospital at Petrolia.

* * *

A. H. White, vice president in charge of sales, and R. D. McDorman, in charge of tank car sales, have been spending some time at the Chicago office of the Indian Refining Company.

* * *

H. S. Shaner, petroleum engineer, for the United States Geological Survey, at Okmulgee, Okla., has resigned effective February 1, to join the Carter Oil Company as a production engineer.

* * *

Paul Martin, chief scout of the Pure Oil Company, Fort Worth, Tex., has just returned from Pittsburgh, Pa. On the return trip he stopped at Chicago to visit at the company's headquarters.

* * *

C. M. Riefkin, advertising manager of the Andrews Steel Company, Newport, Ky., is making a trip through the Mid-Continent, making a survey and collecting data for the company's advertising.

* * *

A. Pranger, engineer with the International Derrick & Equipment Company, Houston, Tex., has just recently come with this company from a connection with the Oil Well Supply Company, at Pittsburgh, Pa.

* * *

Frank Berry, sales manager, and H. C. Moreland, director of exports of the James B. Berry Sons' Company, of Oil City, Pa., are making a business trip through the Central West, Texas and Louisiana.

* * *

A. E. Wallace, superintendent of production, Western Gulf Oil Corporation, Los Angeles, Calif., has been spending a few days in Tulsa. Mr. Wallace attended the funeral of his father at Arkansas City last week.

* * *

Buck Weaver, Jr., formerly with the American Iron & Machinery Company, has resigned to become Mid-Continent representative of the Regan Forge & Engineering Company, with headquarters at Oklahoma City, Okla.

* * *

Henry M. Dawes, president of the Pure Oil Company, Chicago, spent several days on the Gulf Coast looking over properties of his company, including the company's large refinery at Smiths Bluff, south of Beaumont, Tex.

* * *

B. I. Graves, general sales manager of the Associated Oil Company, was in Los Angeles, Calif., in connection with the company's annual sales conference but has since returned to the home office at San Francisco, Calif.

* * *

Thomas B. Slick, independent oil producer, with C. F. Urschel, vice president of the Tom Slick Oil Company, and Louis Campbell, superintendent of the land department of the Oklahoma-Kansas division of the Magnolia Petroleum Company, are on a hunt in southwestern Texas and northern Mexico. A number of oil men accompanied them.

Hale B. Soyster, supervisor, and H. J. Duncan, deputy supervisor, with the United States Geological Survey, at Muskogee, Okla., have left for Washington, D. C., and New York City, to attend the annual A.I.M.E. meeting.

* * *

Lee Scott, of the Vickers Petroleum Company, Wichita, Kans., and Charles Roberts, independent operator, Winfield, Kans., were elected directors of Kansas-Oklahoma division of the Mid-Continent Oil and Gas Association last week.

* * *

Fridjolf Swenson, land man for the Mid-Continent Petroleum Corporation, has been spending a week at the company's headquarters in Tulsa. Mr. Swenson has recently been placed in charge of the new office opened in Fort Worth, Tex.

* * *

Roy Welch has been placed in charge of the new office which the Louisiana Oil & Refining Company is opening at Fort Worth, Tex. Mr. Welch has formerly been located at Abilene as an independent operator, and before moving to Abilene lived in Tulsa.

* * *

Howard S. Bryant, formerly assistant to the chief geologist of the Skelly Oil Company in Tulsa, is now head of the geological department of the Skelly Oil Company in Kansas, with offices on the fifth floor of the new Ellis-Singleton Building in Wichita, Kans.

* * *

E. L. Marston, chairman of the board of directors of the Texas Pacific Coal & Oil Company, stopped at Fort Worth, Tex., on his way home from New York to Los Angeles, Calif. E. J. Marston, his son, is president of the company, with headquarters at Fort Worth.

* * *

T. C. Skeen, a member of the executive staff of the Columbian Steel Tank Company, of Kansas City, Mo., has been in Oklahoma City and Tulsa for several days calling upon representatives of his company and plans to continue his trip to other active centers in the Mid-Continent area.

* * *

Mr. and Mrs. P. R. Yewell have just returned from a month's stay in California, visiting Mrs Yewell's parents, Mr. and Mrs. C. W. Wade at Redondo Beach, also spending some time in Los Angeles. Mr. Yewell is a consulting geologist at San Angelo, Tex. The trip was made by automobile.

* * *

Jack C. Ballagh, secretary of Patterson-Ballagh Corporation, Los Angeles, Calif., is spending two weeks in the East visiting his New York office and also the Mid-Continent offices of Patterson-Ballagh Corporation. This is his second trip East within 30 days. He will return to Los Angeles shortly after February 1.

* * *

Malcom G. Chase, of Providence, a director of the Chase National Bank; Gerard B. Winston, former Under Secretary of the Treasury, and J. Ford Johnson, Jr., of Charles D. Barney & Company, brokers, have been elected to the board of the Mexican Seaboard Oil Company. They succeed Carl Stehis, Rex Townsend and W. L. Pratt.

* * *

Henry L. Doherty, president of Cities Service Corporation, and his wife, the former Mrs. Percy F. Ames, who went abroad September 20 for their honeymoon trip, have returned from Europe. They were married on December 31, 1928, but did not announce their wedding until April, 1929. Mr. and Mrs. Doherty have now gone to Florida.

* * *

Eli R. Cunningham, formerly assistant superintendent of operations of the United Gas Company, Houston, Tex., has been promoted to superintendent. The position includes the general superintendency of both the Dixie Gulf Gas Company and the Houston Gulf Gas Company. He succeeds J. W. Bartlett, who recently resigned to enter business as a consulting engineer.

* * *

Frank Cook, formerly foreman and engineer of Hutchinson Gas Company, has been transferred to the Fort Scott, Kans., property, where he will be superintendent of Union Public Service Company. Merle Carr, who has been superintendent at Fort Scott, has been transferred to Topeka, where he will have a responsible position in the operating department of Capital Gas Electric Company.

The "Oilwell" Oilbath Rotary Swivel

All Bearings Work in a Bath of Oil...

Constant care of lubrication is eliminated.

Long life is assured because all working parts are enclosed.

All glands are packed and adjusted from the outside without removing any part of the swivel.

The swivel will not bind in operation.

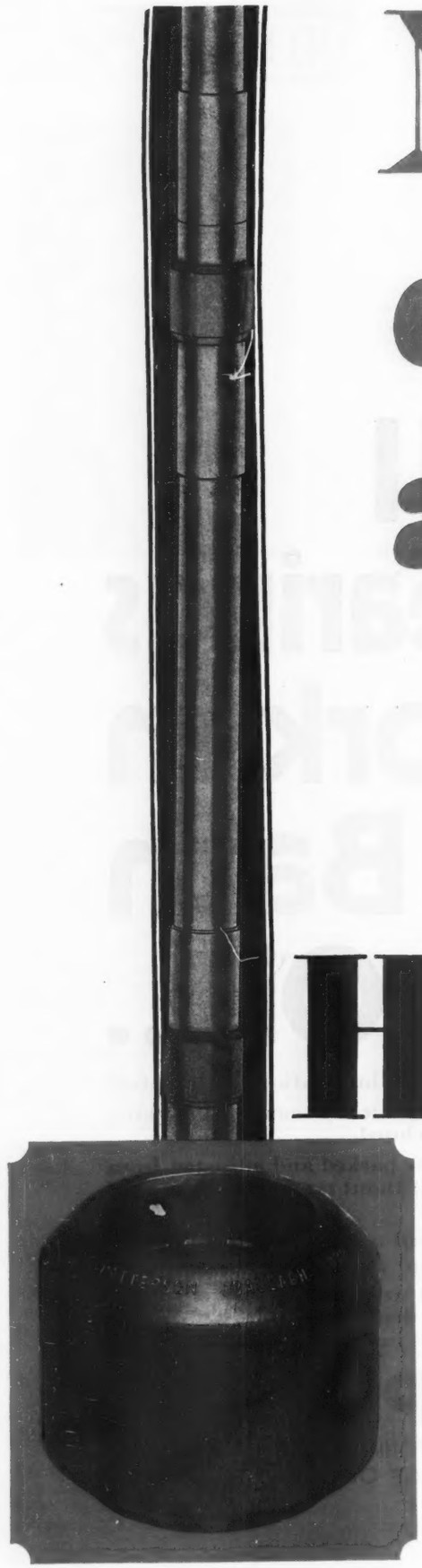
The "Oilwell" Oilbath Rotary Swivel is made in two sizes: 4-inch for wells up to 3000 feet in depth. and 6-inch for wells over 3000 feet in depth.

916

OIL WELL SUPPLY CO.

NEW YORK—LOS ANGELES—PITTSBURGH, U.S.A.—SAN FRANCISCO—TAMPICO—LONDON

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF OIL FIELD EQUIPMENT



No more drill pipe abrasion

No metal-to-metal contact.
No seams. No hinges.
No ball bearings.
Prevent wear on drill pipe.
Prevent wear on casing.

HOPKINS *anti-friction* Tool Joints & Collars...

with genuine Bettis Protectors

FULLY PATENTED

"Best bet yet!"

GENUINELY anti-friction and equipped with Bettis Protectors, Hopkins anti-friction Tool Joints and Collars are the permanent solution to the problem of excessive wear on casing and drill pipe. A shallow groove accommodates the Protector. This gives a resilient seamless cushion that prevents metal-to-metal contact between pipe, joints, collars and the casing. Being lubricated by the mud no appreciable wear occurs on the string or casing. In fact the Protectors outlast the pipe.

Here is an unretouched photo of a string of pipe equipped with Hopkins anti-friction Tool Joints and Collars that gave 6,818 hours of service continuously for 10 months. The pipe shows practically no wear, even the original tool marks being plainly visible, and the Protectors are still good for months more of drilling mileage.

FULLY PATENTED

More than 250,000 Bettis Protectors in service.

Patterson-Ballagh Corporation

Insurance Exchange Building, Los Angeles

Texas and Gulf Coast Distributors:
BETTIS SALES CO., 616 Public National Bank Bldg., Houston

Oklahoma Distributors:
BAILEY & BECKER COMPANY, 410 Thompson Bldg., Tulsa

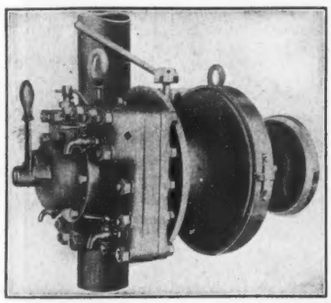
New York Office: 39 Cortlandt St.

Carried in stock at Los Angeles, Santa Fe Springs, Ventura, Kettleman Hills, Bakersfield, Coalinga, Long Beach, Tulsa, Houston, Wink, Texas; Calgary, Alberta, Canada; New York City.

EQUIPMENT AND SUPPLIES

GARDNER-DENVER OFFER TWO NEW HOIST MODELS

Two new models of the Leadville single-drum air or steam hoists are being placed on the market by the Gardner-Denver Co., Quincy, Ill. These have



greater capacity than the present models Nos. 3, 5 and 6. The new models will be known as No. 8 and No. 10.

The outstanding features of these two hoists are improved engine design with balanced pistons and air control through balanced spool valves with increased port areas throughout, giving greater efficiency and the same power of speed forward or reverse.

All moving parts are fully enclosed. The gear sets are enclosed in dust-proof, oil-tight case. The brakes are of the post type operated with a long lever giving instant application and release. A nondestructive clutch connecting and disengaging the drum from the gear set is operated with a lever, easy in operation and positively locking in either position.

The crankshafts are of heavy forged ground steel and run in ball bearings. These hoists are well lubricated and all parts are ground.

The model 8 is rated at 6 horsepower with a rope pull of 2,000 pounds at a speed of 150 feet per minute. The drum is 6 inches in diameter and 9¼ inches wide and has a capacity of 620 feet three-eighth inch rope, weight 550 pounds.

The addition of these two sizes makes a total of five hoists, ranging in capacity from 1,000 to 2,500 pounds rope pull. All gears used in these hoists are made of steel with cut teeth and heat-treated.

RYERSON COMPLETES ADDITION

A new heated building with increased facilities for storing and dispatching has been completed by Joseph T. Ryerson & Son, Inc., Detroit, Mich. This marks the fourth large expansion of the company during its 12 years of growth in the Detroit area. The new unit is 120 by 300 feet, including five bays and a large transfer bay at one end with facilities for the inside loading of freight cars. Five cranes will move material from all parts of the building to the transfer bay, where another crane loads it onto the cars. This equipment, built for both large capacities and greater speed, facilitates dispatching of rush shipments. Extraordinary truck loading facilities are provided by a driveway through the center of the building. This driveway is 20 feet wide and permits the loading of five trucks, one under each of the five cranes, all at the same time. Trucks are also loaded under the crane in the transfer bay. Industrial tracks, paved into the driveway in the transfer bay, make it possible to transfer stock from this building to any part of the plant for combination loading. The floor of the building is on the same level as the railroad car floor, forming a dock at the railroad tracks which simplifies the moving of material to and from the cars.

NEW DROP FORGE WORKS PLANS OPERATION SOON

Organization of the Pacific Coast Drop Forge Corp. in Los Angeles, Calif., has been completed and construction of buildings is under way. Production, it is announced, will begin in February. The officers of the new company are: J. C. Ballagh, president; Clarence White, secretary-treasurer; Clarence Harris, vice president and general manager. Mr. Ballagh is secretary of Patterson-Ballagh Corp. Mr. White is president of the Oil Well Manufacturing Co. and Mr. Harris for 30 years has been associated with the drop forge companies as a superintendent and executive.

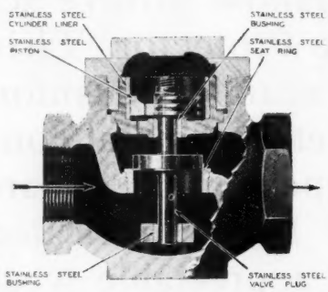
The new plant, in Alameda Street near Randolph Street, occupies 2 acres with 600 feet of spur track from the Southern Pacific Railroad. Three drop forges of 5,000-pound capacity and a cold cutting shearing machine with a capacity of 5½ inches square steel have been installed. The plant represents an initial investment of about $200,000 and will offer employment to 25 mechanics. Company officials say they plan to develop business in drop forgings from Vancouver to San Diego and as far east as Denver.

GOULDS WAREHOUSE IN TULSA

Goulds Pumps, Inc., Seneca Falls, N. Y., manufacturers of pumping equipment for all services, have opened a new warehouse at 213 East Archer Street, Tulsa. The office at 705 Kennedy Building has been consolidated with the warehouse. R. T. Roberts is district manager for the Tulsa area. Established primarily for the oil industry, the stock of centrifugal pumps in Tulsa will consist of those types most frequently used in refinery and natural gasoline plant service.

NONCORROSIVE CHECK VALVE PUT ON MARKET

A noncorrosive, hydraulic double-cushioned noiseless check valve has been perfected, after prolonged laboratory and field experiments, by Neilan, Schumacher

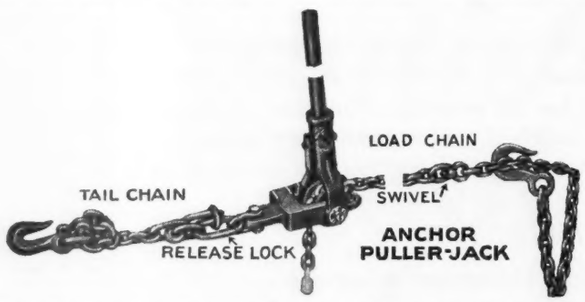


& Co., Los Angeles, Calif. Its rugged construction and noncorrosive materials are said to make this check valve practically indestructible for oil field service where sulphur compounds are generally present. Corrosion is prevented by turning the valve plug, valve seat ring, valve piston, cylinder liner and guide bushings from solid stainless steel bar stock of the highest quality.

This valve is used on air or gas compressors in repressuring or anywhere that a positive, cushioned noiseless check valve is required. Its sturdy body is of cast nickel-iron and it may be used for working pressures up to 1,500 pounds. The hydraulic double-cushioned action of piston enables this valve to work noiselessly and prevents it from chattering and pounding to pieces.

ONE MAN CAN HANDLE HEAVY LOAD WITH PULLER-JACK

To meet the need for a powerful pulling device that could be carried, handled and operated by one man, the T. H. Edelblute Co., Pittsburgh, Pa., has developed the Anchor puller-jack. The machine itself consists of an arrangement of sprocket wheels, ratchets and pawls, operated by a 3-foot handle. The tail chain is fastened to the anchorage and attaches to the machine by a simple release lock which can be easily loosened, to release the load under full strain, if desired. The load chain is hooked to the load and the loose end of the chain passes through the sprocket of the jack. By a ratcheting movement of the handle the operator pulls on the load, and the chain passes around the sprocket, falling loosely below. The standard load chain is 15 feet long and has a swivel in it. The appliance will pull continuously for the entire length of the chain in one movement. Longer length load chains are provided if desired, for special purposes.



A sheave block is included as standard equipment. When this is attached to the load it doubles the pulling power of the jack. This sheave block is used also for making vertical lifts and pulling around corners. The outfit can be used upside down, sideways or in any other position.

Certified tests made by the Pittsburgh Testing Laboratory showed the following results within the safety limits of the entire outfit: Straight-line pull—One man pulled 4,800 pounds (drawbar pull); two men pulled 6,500 pounds (drawbar pull). With the sheave block—One man pulled 6,700 pounds (drawbar pull); two men pulled 9,800 pounds (drawbar pull).

The appliance can be used on almost any pulling job such as moving railroad cars, pulling out mired trucks, tightening cables and wires, shifting tracks, loading and unloading heavy machinery, pulling boiler tubes, pulling belts and chains together for splicing, warping barges, lifting machinery, pulling together concrete forms, construction work or wrecking, etc.

PROBLEMS ARE SOLVED BY PUMP DYNAMOMETER

Simple and accurate instruments for measuring rod loads under service conditions afford a solution of many pumping problems. With a trustworthy stroke and load recording device that may be used in the field information of great value may be accumulated, providing a basis on which to make changes and improvements intelligently and with assurance of the desired results. To meet this need the Martin-Decker Corp., Long Beach, Calif., has developed a pump dynamometer, invented by two petroleum engineers, which uses the same hydraulic pressure principle employed in the company's automatic recording weight indicator.

By the use of liquid under pressure for carrying the load, a true indication is obtained of the pumping loads as they actually occur in normal operation. Friction, inertia, resiliency and movement of parts are so minute as to have no appreciable effect on the results.

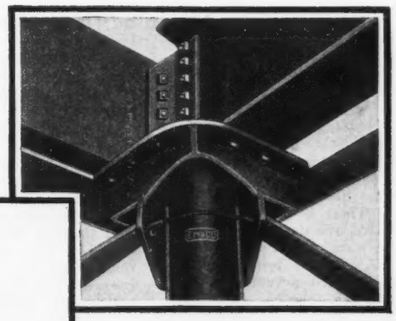
The dynamometer consists of two units, a pressure transformer adapted for attachment to the polished rod and within which hydraulic pressure is generated, and an indicating and recording unit actuated by the walking beam in synchronism and in direct proportion to the stroke and by which this pressure is recorded. The indicator mechanism gives a pump stroke indicator card similar to that given by a steam engine indicator in which the loads upon the polished rod are directly shown at all parts of the pump stroke.

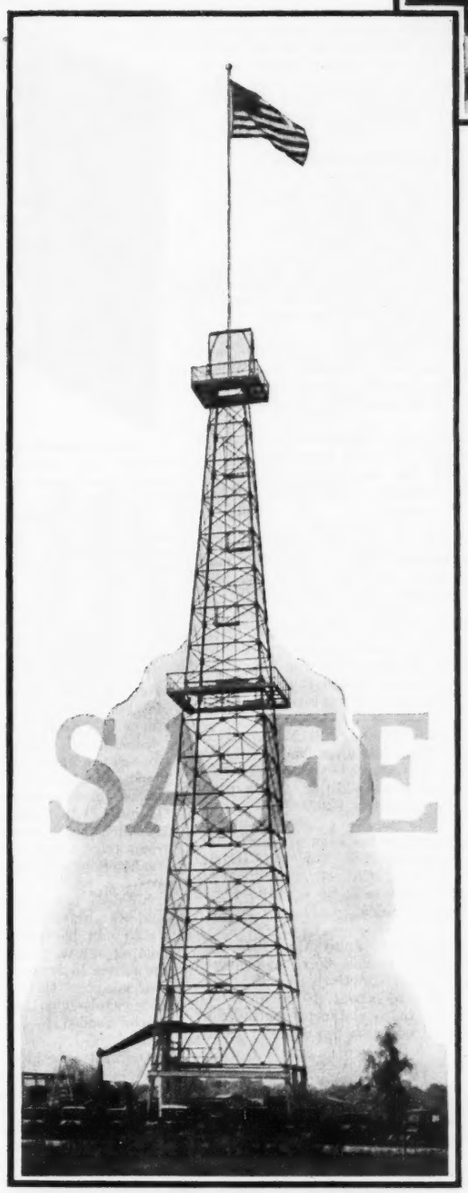
Uses of the dynamometer as enumerated by the manufacturers include the following: Direct measurement of rod loads; determination of proper size of prime mover; measurement of horsepower transmitted by rods; indicates effect of rod and fluid inertia; indicates belting stresses and service; gives a direct compression of pump action and power requirement at various strokes and speeds; will weigh the rods in fluid and determine tubing friction; shows proper counterbalance weight and type for highest efficiency and easiest pumping motion; may be used as a scale to weigh counterbalance weights; measures rod stress range to indicate severity of service; investigation of plunger stroke relation to polished rod stroke; shows the effect of rod stretch and whipping; indicates delayed valve action, worn plungers, cups, and other pump defects; investigation of causes of rod vibrations; shows factors causing low volumetric efficiency and lost power, gas lock, pumping off, poor plunger motion; segregates and measures efficiency of above and below ground equipment; comparison of pumping action and efficiencies of various types of pumps, pumping gears, prime movers and counterbalances; measures loads on pitman, counterbalance suspensions, bearings, jack-lines or any reciprocating part.

CHROMITE CEMENT DEVELOPED

Botfield Refractories Co., Philadelphia, Pa., has developed a new high temperature cement, which will be sold under the trade name of Adachrome Plastic Super-Cement. The basic material is said to be a high-grade chromite ore obtained from South African deposits. The cement is chemically inert, and is also hard, dense and highly refractory. It employs a bonding agent which, the manufacturers say, is efficient at high temperatures. Among the destructive furnace actions to which this cement is said to be resistant are basic and acid slags, molten metal penetration, abrasion, erosion and chemical reaction in the burning of acid sludge.

LEG CAP CASTING secures reinforcing at crown, and compels proper distribution of load between leg and reinforcing. It serves as a firm anchorage for all members meeting at the corner and prevents distortion of the top of the derrick. The large flat top surface supports the water table beams.





136 ft. Hi-Ten demonstration rig erected at the main plant of the Emsco Derrick & Equipment Co at Los Angeles, Calif.
(The top of the flagpole is more than 200 feet above the ground.)

HIGH WIDE and HANDSOME

AGE-WORN prejudices and precedents were ruthlessly discarded when Emsco engineers determined to design, from the ground up, a derrick which would be particularly adapted to the new Hi-Ten steel developed by our engineers. All requirements and stresses were carefully analyzed, and all possible conditions of live and dead load were considered. The resulting derrick is so constructed and proportioned as to give a balanced design with the least possible stress on any member in the structure. This derrick sustains a greater safe load per dollar than any other on the market.

EMSCO HI-TEN DERRICK

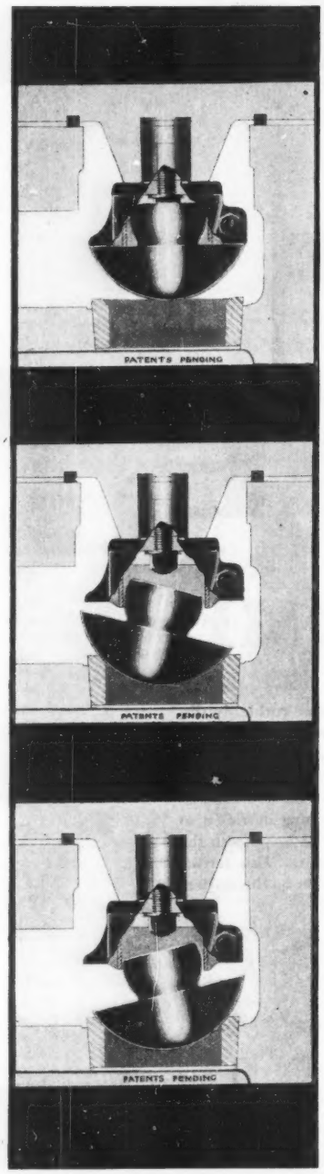
All Emsco and D+B Products (Except Derricks) Sold Exclusively in Mid-Continent Fields by The Continental Supply Company

EMSCO STEEL EQUIPPED WELLS ARE SAFE

EQUIPMENT AND SUPPLIES

IMPROVED CALMEC VALVE READY FOR DISTRIBUTION

Marking a new departure in design and operating characteristics, the California Manufacturing & Engineering Co., Los Angeles, Calif., has placed a new



slush-pump valve on the market. Like its predecessor, it is an all-metal valve, mushroom in shape which seats in a narrow ring seat.

The new Calmec valve is forged in one piece and has no obstructions of any kind in the valve port or aperture. The stem fits into a bonnet which is locked in place in the pump with a single screw and oscillates on the same radius as the valve itself, thus insuring that all parts of the valve come into contact with all points on the circumference of the seat simultaneously and eliminating side play or wobble without the use of a wing guide.

Because of the fact that there is no wing guide or web to obstruct the flow of slush through the valve port it increases the capacity of any pump. Because the entire aperture is open immediately upon the beginning of the upward stroke of the valve it eliminates the back pressure and pump "hammer" thus increasing the working life of the entire pump and decreasing the power loading in proportion to the pumping volume. The narrow ground seat cannot offer lodgment to particles of sand or rock. The seat cleans itself with every stroke of the pump. There is no rubber to deteriorate. There are no points of wear other than the stem socket in the bonnet and seat itself. In the tests conducted the valve is reported actually to have improved with use.

TRADE LITERATURE RECEIVED

The Black & Decker Manufacturing Co., Towson, Md., has issued a new 40-page illustrated catalog of electric tools.

The latest catalog of the Lee B. Mettler Co., combustion engineers, Los Angeles, Calif., shows drawings of Mettler burner installations in numerous boilers, heaters and furnaces.

How a submarine line of oxwelded construction solved a problem of loading tankers where there were no harbor facilities is told in the January issue of Oxy-Acetylene Tips, published by the Linde Air Products Co., New York.

"Specifications for Gas Meter Boxes" is the title of a publication issued by the H. W. Clark Co., Mattoon, Ill. It presents suggestions for curb installations of gas meters.

Synchronous motors are the subject of an 88-page booklet prepared by the General Electric Co., Schenectady, N. Y. Much information of engineering value is given and halftone illustrations supplement the text.

The Emsco Derrick & Equipment Co., Los Angeles, Calif., has issued a new bulletin (No. 38) on its Type G heavy-duty roller-bearing reduction gear.

The January number of Heat Engineering, published by the Foster Wheeler Corp., New York, contains an interesting article on "Flexibility of Modern Distillation Units."

A bulletin issued by the Air Preheater Corp., Wellsville, N. Y., tells advantages possessed by the Ljungstrom air preheater and contains charts illustrating the benefits of air preheating, gives examples of savings accomplished under typical operating conditions and explains the functions of air preheaters.

"Modern Refractory Practice," a 178-page book published by the Harbison-Walker Refractories Co., Pittsburgh, Pa., gives much information in nontechnical language of value to the user of refractories. Some of the tables, such as those showing how to calculate the brick required for arches of any span and rise, have never before appeared in print.

HAND CRANK FOR EMERGENCIES

The new hand-crank attachment announced by the Erie Meter Systems, Inc., Erie, Pa., can be used on any direct-drive meter pump. In case of power failure the pump is operated by attaching the hand crank through the open door. This attachment is geared in such a way that it can be operated 90 revolutions per minute very easily, giving a flow of 7 to 8 gallons per minute. The gears are engaged only when the hand crank is in use, which eliminates gear or chain noises and cuts power consumption to a minimum.

DYNAMIC BRAKING CONTROLLER

A new dynamic braking controller for crane hoists is being built by the Electric Controller & Manufacturing Co. of Cleveland, Ohio. This device, known as the Wright dynamic powering circuit controller is of the magnetic contractor type and is intended for use on crane, ore and coal bridge, and bucket hoists.

The brake releases instantly. Instead of passing only one-third of the line current through the brake on the first point lowering, this new circuit passes all of the line current through the brake. The operator can move his master controller instantly to any desired speed point.

BUSINESS NOTES

The Four-Wheel Drive Auto Co. reports its truck sales for 1929 increased 46 per cent over those of 1928.

The Foster Wheeler Corp., New York has installed its Los Angeles, Calif., district office in the Petroleum Securities Building, 714 West Tenth Street.

Carl A. Scholle has joined the sales force of the Ohio Injector Co., Wadsworth, Ohio, and his territory is the State of Texas with headquarters in Houston.

The American Glycerine Co., Inc., a subsidiary of E. I. du Pont de Nemours & Co., Inc., has opened an office in the Kennedy Building, Tulsa, with Paul F. Lewis as manager.

Chain Belt Co. sales for 1929 were just over $8,000,000. This is $900,000 more than in 1928, according to C. F. Messinger, general sales manager.

The Maintenance Engineering Corp., Houston, Tex., now represents the Edward Valve & Manufacturing Co. in the El Paso territory, which includes southern New Mexico and western Texas.

The Lufkin Foundry & Machine Co., of Lufkin, Tex., manufacturer of oil field equipment, has started construction of a concrete and steel addition to its plant to cost approximately $20,000.

Harry Bougner has been appointed territorial representative for the Rhodes Metallic Packing Co., of Detroit, Mich. His headquarters will be at 1105 South Elgin Avenue, Tulsa.

The Southland Supply Co., with district offices in Dallas, Tex., has opened a branch office in Fort Worth, Tex., with a force of about 10 men. E. G. Shaw is the industrial representative of the company, covering the State of Texas.

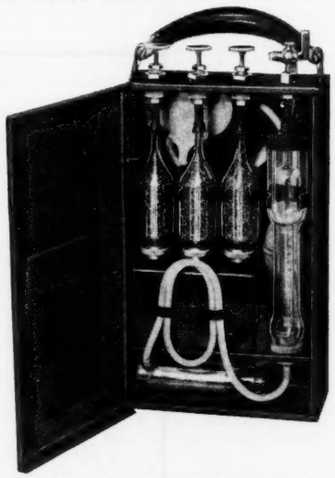
The Hercules Powder Co., Wilmington, Del., announces its net profits for 1929 as $4,358,904.38 as compared with $4,038,980.67 for 1928. Gross receipts were $32,976,417.86; surplus December 31, following dividends and reserve transfers, $13,380,595.86.

Headquarters for the sale of Edward Valve & Manufacturing Co. products in the Easton-Allentown-Reading district of Pennsylvania are now at 1121 Maple Street, Bethlehem. The company is represented by W. E. Groff, who succeeded to the business of the W. E. Groff Co., Inc., of Easton.

William V. Logan, formerly with Goodyear and the United States Rubber Co., has been put in charge of the petroleum industries division of the Boston Woven Hose & Rubber Co., with offices in the General Motors Building, New York. Associated with him will be Fred A. Mathey.

IMPROVEMENTS IN HAYS ANALYZERS ANNOUNCED

The Hays Corp., Michigan City, Ind., manufacturer of combustion efficiency instruments, announces important changes in its line of gas analyzers (orsats), used



in the determination of carbon dioxide, oxygen and carbon monoxide content of boiler flue gases and oxygen content of casinghead gas.

Six standard ranges are available in a metal carrying case weighing only 8 pounds complete and 15 inches high, 7¾ inches wide and 4¼ inches deep. There are three special ranges in a slightly larger case. Features of the new Hays improved gas analyzer as enumerated by the manufacturer are:

Light weight and compact design.

Heavy molded glass absorption pipettes attached to the molded hard-rubber chemical bottles with soft-rubber gaskets and finger compression nuts.

Steel wool surface method of absorption of the gases being analyzed, making it possible to take a CO_2 reading in 30 seconds and a complete analysis for CO_2, O_2 and CO in from four to five minutes.

Monel metal needle valves and easily renewable nickel needle valve seats instead of pinch clamps and glass stopcocks.

Molded hard-rubber chemical bottles held in place by slidable flat spring which can be raised after loosening the holding screw, permitting disassembly of the entire instrument for cleaning within two minutes' time. All parts are accessible. Only a pair of pliers and a screwdriver needed to disassemble the instrument.

Owing to the method of supporting the few glass parts in the metal case there is little danger of breakage. All parts, however, are easily renewable in the field.

The instrument may be carried in any position without the liability of spilling or mixing the solutions.

The leveling bottle and the aspirator and tubing are clamped inside the case after completion of tests. When the doors are closed all accessories are inside the carrying case, with the tubing so arranged on convenient reels that kinking is not possible.

ESTABLISH PETROLEUM DIVISION

The Cook Paint & Varnish Co. has established a petroleum sales division with headquarters in Tulsa. Offices and warehouse for the division will be located at 214 East Second Street. Reed Meehan has been placed in charge of the division. Thomas E. Brandon will be associated with Mr. Meehan in charge of the Fort Worth office.

INTRODUCING Bridgeport HARD-FACED Cutters

N.B.

for the
NEW TYPE
SWAN UNDERREAMER

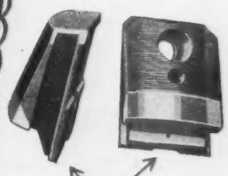
CONQUEROR of all underreamer problems, an advancement in this work never before dreamed of, that's what BRIDGEPORT HARD FACED CUTTERS MEAN.

The result of hundreds of actual field tests, Bridgeport Hard Faced Cutters reduce the cost of underreaming to an extent never before known, through wiping out all field dressing, making a full sized reamed hole, and running longer and farther without pulling the tools. They resist wear, and withstand greater shocks, practically eliminating breaking or battering. Ready for use as received.

Get the full story of BRIDGEPORT HARD-FACED CUTTERS from your nearest Bridgeport Store, together with sale or rental prices. You will be amazed at this newest development in underreaming.

N.B. The silver painted band on the bottom of the cutters indicates the hard faced surface---one of Bridgeport's great achievements in cutting the cost of underreaming.

Consult Pages 276 and 277 of the Composite Catalog of Oil Field and Pipe Line Equipment for Bridgeport's Complete Line.



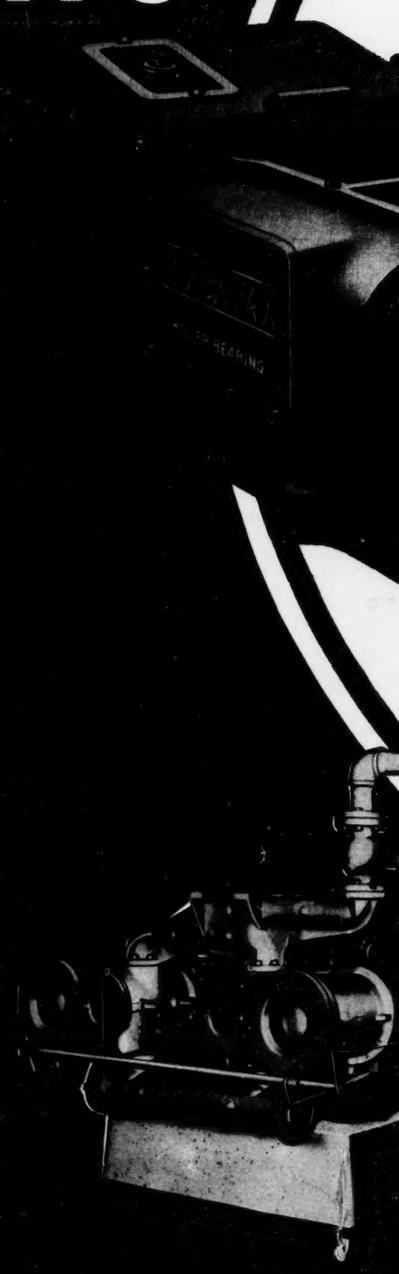
N.B.

for the
REGULAR TYPE
SWAN UNDERREAMER

The BRIDGEPORT
MACHINE COMPANY
GENERAL OFFICES AND FACTORY, WICHITA, KANSAS
Branches Throughout the Oil Fields

IDEAL-AJAX
ROLLER BEARING
DRILLING ENGINE

Descriptive Bulletin
No. 48 A
Sent on Request



THE
NATIONAL SUPPLY
COMPANIES

PISTON VALVE TYPE
12 X 12
THE NEW LARGE CAPACITY STEAM SEPARATOR DESIGNED
FOR INSTALLATIONS WHERE LARGE QUANTITIES OF WATER
MUST BE HANDLED, DUE TO CONDENSATION IN LONG STEAM LINES,
UNDERSIZE BOILERS AND OTHER CAUSES.

Field Problems and Their Solution

EDITED BY THOMAS F. SMILEY

In order that men connected with the drilling, producing and transporting branches of the petroleum industry may procure quickly a solution of many problems confronting them from time to time in their work, The Oil and Gas Journal has arranged with leading engineers and other recognized authorities to answer questions submitted by readers of this publication pertaining to the work of drilling and producing crude oil and transporting this product.

Everyone is invited to submit questions freely. These questions will be submitted to proper authorities by Mr. Smiley, who edits the page, and answers, based on the best available information, will be published. Each question should give as much detail as possible, especially where it relates to matters where depths of sands, types of sands and operations on adjoining properties would have a bearing on the problem involved. The source of all questions will be considered as confidential and only initials will be published in connection with the question.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or practices which are improvements.

In case an immediate answer is important, one will be given by mail if the writer requests it.

MELTING THE PARAFFIN

We have a number of old wells producing oil in our shallow lime formation. Please give us information as to what we may use that can be poured in these wells that will melt the paraffin, wax, etc., now on the face of the sand. We do not want to remove the pump tubing unless it is absolutely necessary. Can this mixture be pumped clean by the regular pumping equipment?—J. H. M.

Various solvents and heat-generating chemicals have been used with varying degrees of success in removing paraffin from wells. These include ordinary gasoline, casinghead gasoline, naphtha, benzol, kerosene, hydrochloric acid, sodium peroxide and calcium carbide. Mixtures of metallic aluminum and caustic soda, which react with each other chemically and produce a high degree of heat when they come in contact with water, are the reagents most commonly used.

Sodium peroxide reacts with water to form free oxygen, which together with the heat from reaction tends both to melt and to burn paraffin from the well. It should be mentioned here that the use of sodium peroxide is hazardous unless precautions are taken to keep it dry and to avoid spilling it on the derrick floor or on the ground. In the absence of such precautions the sodium may start fire.

Hot crude oil is used to heat the sand and dissolve the paraffin. The common method of introducing hot oil is to connect the well to a tank containing steam coils. The oil then is pumped into the tank and heated. The heated oil then is run into the well between the casing and the tubing. Gasoline, kerosene or other oil sometimes is added to the crude thus circulated in order to increase the solubility of the paraffin. If the oil is hot enough and the operation is continued for a long enough time the paraffin will be removed from the face of the sand. The difficulty lies in the fact that the oil cools rapidly as soon as it reaches the bottom of the hole, its efficacy thus being greatly diminished.

Concerning the use of chemicals, C. E. Reistle, Jr., says: "Chemicals that generate heat may often be used to advantage in removing paraffin from the face of the sand. It is advisable to have the sand covered with oil. The chemical heats the oil; the heated oil dissolves the wax, and can then be pumped from the well. If the chemical is used without an appreciable amount of oil in the well, the paraffin may be melted and cooled again before it can be removed by pumping, or it may congeal in the tubing while being pumped from the well. When the chemicals are properly used, satisfactory results can often be obtained at a moderate cost."

It is suggested that you read the article, "Electric Heaters Remove Paraffin," in The Oil and Gas Journal of November 14, 1929.

CONFUSION OVER TERMS

I am confused by the use of the terms "gas pressure," "rock pressure" and "hydrostatic pressure" as they are used in articles about oil production. I always supposed that gas pressure and rock pressure were the same thing, but I come across allusions to the two pressures in connection with the same well, which indicates that they mean different things. My understanding is that the position of the different rock strata is fixed and immovable, so I do not see how these rocks can exert any pressure on oil or anything else any more than the floor of a house can be said to exert pressure on the cellar under it. I would be glad to have these terms made clear to me.—Y. D. M.

Uren in his book, "Petroleum Production Engineering," says:

"While gas pressure is recognized as the chief cause of oil movement in the drainage of wells, there can be no doubt that gravity, hydrostatic pressure and rock pressure, forces foreign to the oil but brought to bear directly upon it, are in part responsible for the flow of oil into the well.

"The hydrostatic pressure developed within a porous rock is directly proportional to the depth of the superimposed column of fluid. In many fields containing several oil or gas sands, it is found that the closed-in initial pressures increase with depth, and are proportional to the vertical depths below the outcrops of the strata in which the accumulations occur. The direct influence of the pressure of water, with which the rocks are saturated, is here evident.

"Rock pressure is supposed to be directly proportional to the depth below the surface. Modern conceptions of earth pressure assume that rocks are plastic in varying degrees, and that pressure may be transmitted from the rock structure to liquid confined within the pores."

However, it is agreed by most authorities that gas pressure is chiefly responsible for such flow of oil into the well as occurs under present-day methods of production.

In using these different terms it is quite possible that the operator has in mind the method followed in determining them. If a gauge is placed at the casinghead it would register the pressure within the pipe at that point and this would be in fact that pressure built up by all the forces acting upon the oil reservoir less that force required to lift the oil to the surface and the friction produced in moving the oil upward through a vertical pipe.

So while the term "rock pressure" is sometimes applied to the gauge pressure at the well head, this is not strictly correct, for if it were possible to record the gas, hydrostatic and rock pressure separately at the bottom of a well each force could be assigned its particular proportion of the pressure built up and used in expelling the fluid from the reservoir, but as this is not practicable it would seem that the term gauge pressure would be correct to use for that pressure recorded at the casing head, while it is possible to estimate by an empirical formula the approximate rock pressure by multiplying the height of the rock column by 1.08 pounds per square inch, this being the approximate weight of a section of sedimentary rock.

This pressure is based upon a series of horizontal strata and if they are inclined from the horizontal the resulting pressure can be computed by applying a trigonometrical formula: (L = cos angle of dip × (cos 90 — angle of dip) × W, where W is the weight of the overlying horizontal strata.

For the hydrostatic head, it is only necessary to ascertain the difference in vertical height between the outcrop of the strata and the position underground that is under consideration and multiply this distance by .43 pound per square inch for fresh water or .498 pound per square inch for salt water to ascertain the weight of the fluid column at the sand. This is the hydrostatic head of water, and if it lies adjacent to the oil will exert this pressure upon it, less friction losses.

Devices have been constructed for ascertaining pressures at the bottom of the well and getting samples of the oil, gas and water, but they are not generally used and therefore there is not much information available on this subject other than that worked out by men who have been active in the production of oil for many years which is empirical in its nature or as commonly stated "rule of thumb," but all modern practice does provide accurate means of registering the pressures at the surface or the discharge of the well and from this practical men study their wells and regulate them according to their experience.

WHY WAS IT CALLED THAT?

GREEN OIL

The word "green" in this term refers to the color of certain petroleums and not to any absence of seasoning or maturing. High-grade crudes, the Pennsylvania for example, have a greenish cast. Thus the designation "green oil" carries with it an implication of high quality.

USE OF THE CORE DRILL

How is the diamond core drill used in ascertaining the size of a structure supposed to be favorable for the presence of petroleum? Do they simply drill with the diamond drill at certain intervals along a straight line? Are they doing more of this preliminary investigating with the core drill than formerly or are the big companies depending more upon the reports of their geologists who explore for seepages and outcroppings, etc.?—E. S. W.

In some areas under consideration as possibly oil producing the first solid rock stratum beneath the surface is covered with broken or loose material and as it is essential that the surface geology be based upon the examination of rocks that have not been disturbed some means must be devised to reach the sound rock.

In some places it is possible to dig holes or trenches to the solid rock formation and in this way the geologist can obtain evidence of the type of stratum and ascertain its dip and strike.

Where the solid rock is buried too deep for such prospecting it has become the custom to set up a diamond drill outfit and sink holes, usually about 2 inches in diameter to the solid rock, and in doing this type of work it is usual to select some formation that is distinctive and then use this as a "key bed" or "marker."

The drilling outfit is set up at one corner of a piece of ground and the hole dug through the upper soft and loose material by use of a fishtail bit, but when the formation to be sampled is reached a circular steel bit set with black diamonds is used and a core is taken.

This core is brought to the surface and examined and from it the dip and strike as well as the thickness of the stratum are determined.

The outfit then is moved to a new location, usually about one mile way and the process of getting a core is repeated. In this manner several cross section samples of the key bed or marker are obtained and when the structure is mapped an idea of the form of the upper stratum is obtained. From this the general geology of the area is ascertained.

This method of exploring buried structures near the surface is being followed by most of the major companies in western Oklahoma, western Kansas and northern Texas as well as elsewhere, where similar conditions exist, and several pools in northern Oklahoma were opened by this method, notably the Thomas, Hubbard, South Braman and Tonkawa Pools, all in Kay County.

WANTS TO EVAPORATE BRINE

Have you made any observations on salt water evaporation in any of your publications? We have approximately 1,000 bbls. of salt water in Wilbarger County, Texas, which we wish to evaporate. What would you suggest as the most economical and at the same time the most efficient method of evaporating that quantity?—R. R.

An article in The Oil and Gas Journal for January 19, 1928, "Wants Salt Water so Drills for It," describes a process developed by Dr. Otto V. Martin for the utilization of oil field brines in the manufacture of sodium chloride and calcium chloride, together with bromine and iodine. This process is patented, but features of it may interest you if your object merely is to evaporate the salt water without recovering the solids.

In The Oil and Gas Journal for September 19, 1929, is an article, "Problems of Winkler County Solved," which describes the method followed in that county in disposing of salt water. The process is not by evaporation entirely, although ponds are used in some instances.

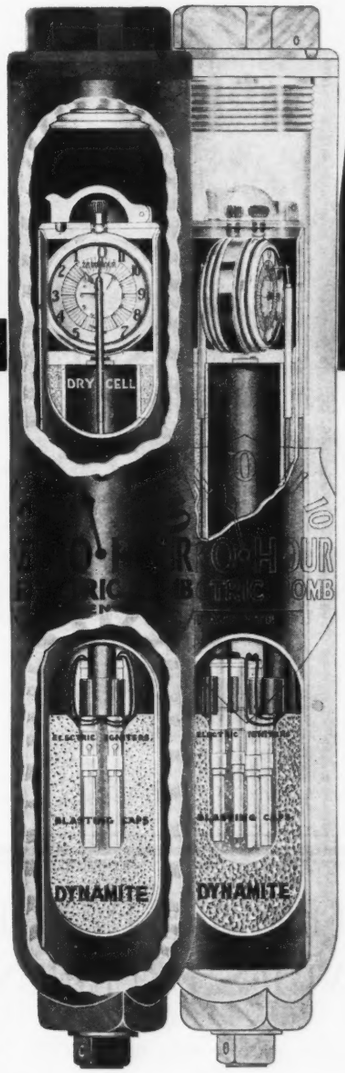
A plant for the recovery of salts from oil field brines by the Martin process has been established near Sand Springs, Okla. The brine is used as cooling water in refineries and power plants, so that heat which otherwise would be wasted is utilized in evaporation of the brine.

If you have ample gas available it might be possible to build some form of simple heater and then spray the hot water to the atmosphere. It seems probable this would be quite effective in getting rid of it. Sprays are made by various companies whose advertisements appear in The Oil and Gas Journal and they are in common use around cooling systems for refineries and boiler plants.

THE ONLY BOMB BETTER THAN ZERO HOUR BOMBS, AND THAT'S

SUPER UTILITY

A ZERO HOUR BOMB IS TWO THE ZERO HOUR DUPLEX



..for *every Shooting need*

WINS PERMANENT PREFERENCE FOR THE DUPLEX Zero Hour Electric Bomb

Plug and Socket Connectors..... Improved Firing Pin

What has been your hardest shooting problem?

Many experienced operators have come to consider Zero Hour Electric Bombs as almost indispensable for putting off sand-tamped shots; shots where a liner is pulled, after the charge is placed; shots where the pipe is pulled, almost invariably burying the charge; shots where fluid is swabbed down, pulling in cavings over the charge; putting off the shot in a deep, crooked hole; in trouble shots to sidetrack tools and in shots to salvage casing in deep holes containing heavy fluid. These operators recognize in the Zero Hour Duplex Electric Bomb a degree of perfection which makes it the *super-utility means* for putting off any and every kind of shot. In every way that a time-controlled, electrically operated detonating device excels an obsolete method, the Zero Hour Duplex Electric Bomb carries that excellence to the super degree.

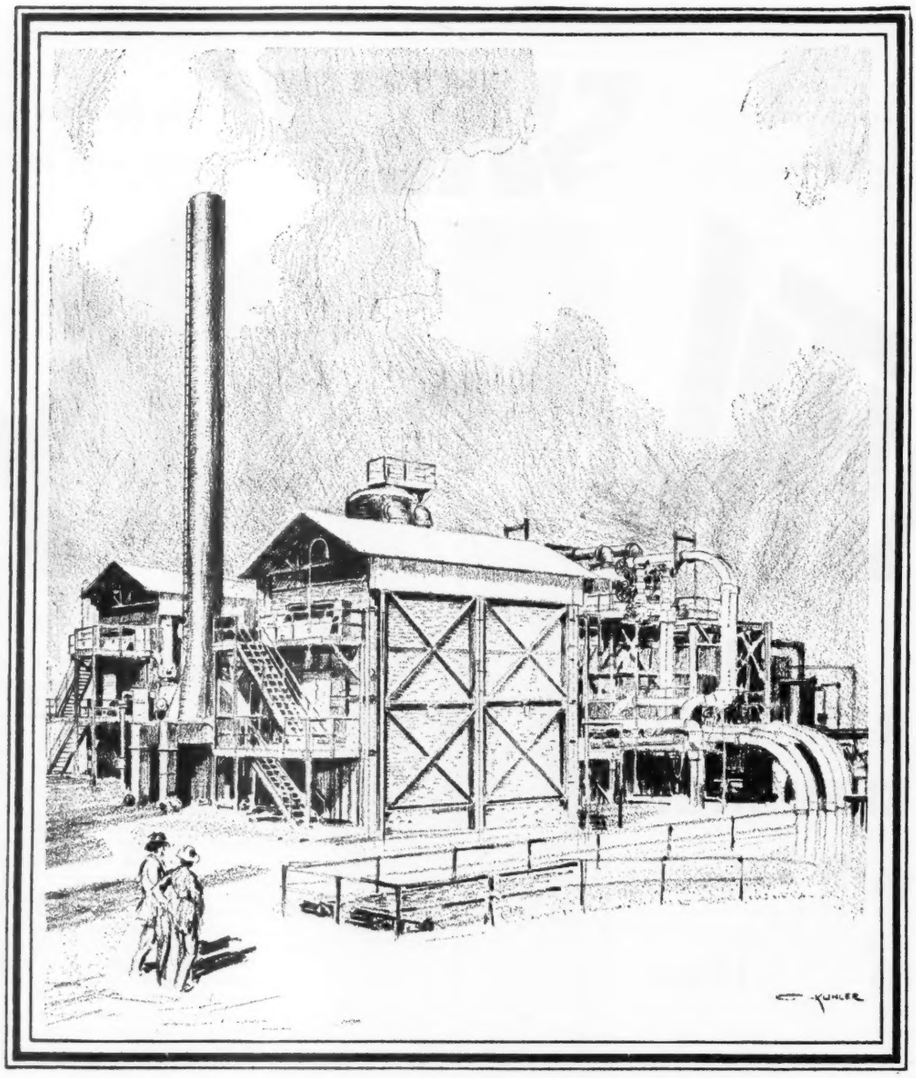
The Duplex is not a "double" bomb. It is enclosed in the same size container that formerly held the original Zero Hour Bomb. But all of its vital working parts have been duplicated, hence the Duplex principle. There are two watches and two sets of blasting caps where one was contained before. In this manner there are two complete timing and firing mechanisms, each independent of the other, enclosed in the same metal, fluid-tight container that formerly held one only. By this addition the chance of a failure with the Duplex Bomb has been reduced to a figure so small that it is almost beyond computation in ordinary mathematics. The only additional operations in setting are the winding and setting of a second watch, identical with the first one, followed by the attachment of the additional igniter and blasting caps. This attachment has been simplified by a plug and socket connection, assuring perfect electrical connections by merely pushing in a plug. The gold spring firing pin holds accurately to the "O" firing point, no matter how often the hour hand passes either forward or backward across it, in testing. Because the Zero Hour Duplex Electric Bomb puts off *any* shot so positively, safely and economically, it is the perfect and preferred means for *all* of them.

Zero Hour Electric Bomb

ZERO HOUR TORPEDO TULSA, OKLAHOMA

Zero Hour Bombs are obtainable through all principal torpedo companies

COMPANY.. 408 COSDEN BLDG.



For BUILDING REFINERIES IN FOREIGN LANDS
KELLOGG PROVIDES EXPERIENCED SERVICE

Wide experience in foreign, and in domestic fields, enables Kellogg to design and construct foreign refineries without delay, and at a low cost. An impressive volume of foreign business reflects the success of Kellogg Construction.

The M. W. KELLOGG COMPANY

225 Broadway, New York

LOS ANGELES, CAL., 1031 SOUTH BROADWAY TULSA, OKLA., PHILTOWER BUILDING

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Technical Questions Answered

BY CHARLES K. FRANCIS, PH.D., TECHNICAL EDITOR

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry. Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to submit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with the marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible so as to assure a satisfactory answer.

All inquiries should be signed and if other than the given initials are to be used please indicate the desired letters.

Questions involving patented processes, intricate formulas and calculations and estimates of costs, for obvious reasons, cannot be answered. The replies will appear on this page within a reasonable time.

CARE OF MERCURY THERMOMETERS

I would like to get some information about repairing thermometers where the thread is broken. Would it be better to heat the thermometer and try to force the thread together or should it be cooled so as to collect all of the mercury in the lower part? What is the safest way to keep them in good condition and prevent breaking of the threads? I am thinking of thermometers ranging from minus 30 to zero Centigrade, or minus 10 to plus 20 kept in the average room temperature. —H. P. N.

The mercury may be brought together in most thermometers by centrifugal movement or by shock. This method is better than heating. When making use of centrifugal force the bulb of the thermometer should be in the outward position and the instrument firmly fixed so that there will be no danger of breaking it when whirled at high speed. A similar principal may be used by firmly grasping the thermometer, bulb out, between the first and second fingers and covered with the thumb and then whirling it, with arm fully extended, as rapidly as possible. Take care that there is no overhead object close enough to be hit; also grasp the instrument not too far up the stem, say about 2 or 3 inches from the bulb end. The shock method is not safe for long stem thermometers but is the usual means for bringing the mercury together in short stem instruments, such as cold test and clinical thermometers. The stem is grasped between the first finger and thumb and the bottom of the palms brought together in quick succession.

Thermometers should not be subjected to conditions where there may be sudden changes in temperature and never exposed to temperatures higher than their maximum graduations. Sometimes the whirling and shock methods will not cause the mercury thread to come together and then heating may be tried, but this must be done with great care and always observing the precaution not to exceed the maximum graduation. An expensive instrument should be returned to the manufacturer for repair.

The graduations mentioned suggest that such instruments should be kept in an upright position in a convenient part of a refrigerating system so that the maximum graduations will not be passed.

ALUMINUM FOIL FOR TANK COVERING

Have you any information about the use and value of aluminum foil which is being proposed as a covering for tanks? How is it applied so as to make a firm covering which will not come off?—H. W. P.

Aluminum foil has recently been suggested for covering tanks and other vessels as a protective covering against sulphur corrosion and for reducing losses by evaporation, because of its chemical and heat reflecting properties. The development of methods for the application of aluminum foil in the petroleum industry have been credited to McGary and Rogers, Research Department, Gulf Pipe Line Co., and have been described by Stanley Gill in the paper, "Aluminum and Its Alloys as Corrosion-Resistant Materials in the Oil Industry," presented before the A. P. I., Chicago, December 5, 1929, from which the material following is quoted:

"Although the method is still very much in the experimental stage, it has already been demonstrated conclusively that it possesses great value for a number of purposes. The essential feature of the application is in the selection of a suitable adhesive material which will hold it tightly to the surface to be protected. With an adhesive of suitable properties, the application of the foil is surprisingly simple. It is not damaged by rough handling and can be worked over and into irregularities of the surface with little trouble. The only important requirements in the application are that the adhesive should possess the proper degree of tackiness and stickiness and that all air bubbles should be forced from beneath the foil during application. An idea of the labor requirement may be gained from the fact that the roof of an 80,000-bbl. tank can be completely coated with foil by using 12 man-days of labor. Even this figure can probably be reduced by certain slight changes in method of application.

"Foil from .0015 to .005 inch thick has been successfully applied by this method. Generally speaking, foil as thin as .002 inch is somewhat fragile for any service where it will be subjected to severe mechanical usage. The use of foil of this weight will probably be confined to the sides of tanks or to other surfaces upon which appearance or reflectivity are the only results desired. Foil .003 inch thick is heavy enough and strong enough for almost any application."

Data, based on experiments, are given, indicating that evaporation losses and corrosion may be reduced by the use of this foil.

NATURAL GASOLINE FOR BLENDING

I see that natural gasoline is priced at 5 cents. What would be the result if we shipped in a car of same and put it into our 20,000-gallon tank? Would it mix? Would it evaporate here at zero weather? —W. F. S.

There are very large quantities of natural gasoline blended with refinery gasoline; in fact, if it were not for natural gasoline, the price of gasoline would have to be much higher than it is. The reason for this is that much of the crude oil refined does not contain the lighter products necessary for a gasoline with good starting qualities, but the distillate may be corrected by adding the proper quantity of natural gasoline. The blending of natural gasoline with refinery gasoline must be done with care so that the final product will meet shipping and quality specifications. Larger quantities of natural gasoline may be used in sections of the country where low temperatures will be experienced for long periods than in the warmer parts.

It will depend on how much gasoline there is in your tank and the quality as indicated by gravity to what extent natural gasoline should be blended. There is no chance for natural gasoline to evaporate very much at 0° F. The ordinary automobile is not designed for an extremely volatile fuel, consequently it is not advisable to use a blend containing more than 50 per cent natural gasoline, and this quantity will probably prove satisfactory in your section.

Various formulas have been used for calculating gasoline mixtures, the rectangle method being the best known. This may be used as follows: Draw a rectangle and set down in the two left-hand corners the known gravities. The desired gravity in the center. Place the difference between the desired number and the two given numbers in the opposite right-hand corners at the end of the corresponding diagonals. The results thus obtained show the relative number of parts of the given gravities which lie on the horizontal lines of the rectangle to be used when making the blend. It will be well for you to be guided by what you know to be the highest gravity gasoline that is being used in your vicinity.

DIPHENYL FOR HEAT TRANSFER

What is the nature of the substance called diphenyl and how is it used in the refining of crude oil?—L. G. W.

Water and steam have long been the common means for conveying heat from one place to another or from one body to another, but there are objections to the use of water in any form for this purpose. The evaporation with accumulation of residue and scale are among the several unfavorable properties of water as used in heat transfer. Experiments, and even commercial installations, have been made with several other substances, the most promising of which has been mercury. The weight, high cost, and poisonous character of mercury have tended to discourage its use. The search for a suitable medium has called attention to diphenyl as a compound which seems to overcome, when used under some conditions, many of the objectionable features of these better known heat transfer agents.

Diphenyl is an organic compound having the formula $C_6H_5.C_6H_5$ with an aromatic odor similar to naphthylene. At ordinary temperatures it is a yellowish crystalline solid, which melts at 159° F. and the liquid boils at 491° F. It is quite stable consequently there are no objectionable decomposition products, and it does not combine with metals under the conditions of use so it has no corrosive action on the equipment. The market price is about 40 cents per pound.

Some of the physical properties are compared with those of water in the table following. Temperatures are Fahrenheit.

	Water	Diphenyl
Melting point	32	159
Boiling point	212	491
Heat of fusion-B.t.u.	144	518
Critical temperature	689	980
Temperature when pressure is 100 pounds	337	710

We have no information as to any use of diphenyl in the refining of crude oil but some use is being made of it for distilling lubricating oils. The transfer of heat by the indirect method reduces the danger of overheating and control of temperature is much simpler than with steam. Diphenyl may be heated in an ordinary water tube boiler and the hot liquid or the vapors circulated through the oil to be distilled. One form of operation is to conduct the diphenyl vapor into a tubular evaporator where it gives up its latent heat of vaporization and a part of the sensible heat to the oil being circulated through the tubes. The condensed diphenyl flows from a trap at the bottom of the evaporator to a pump where it is pumped through an exchanger, and then back to the heating element. The vaporized oil is expanded and condensed.

COLOR AND GUM INHIBITORS

What chemicals are used for preventing gasoline from going off color and preventing the formation of gum? Is there any scientific reason for their use? Can you tell me in what form they are used and what quantities will give the best results?—T. M. P.

There are a number of substances that tend to stabilize gasoline with respect to color and the formation of gum. We know that some form of oxidation is apparently responsible for the development of color and the increase of the gum content of gasoline. Anything which will retard oxidation will serve as an inhibitor but it is not known in exactly what way such substances function. The inhibitor is usually put into solution in the gasoline and of course the quantity added must be somewhat less than that required for saturation. Most of them are but slightly soluble in gasoline, so the quantity used may vary from 0.1 to 0.0001 per cent. The substance that will produce the desired result for the minimum quantity being preferred.

You will be interested in the article by Egloff, Faragher and Morrell, in The Oil and Gas Journal, December 5, 1929, page 116 on this subject. The information following is from this article.

A gasoline gravity 58 A.P.I., initial 110°, endpoint 437, and color 22 Saybolt, was used for the color tests. A sample of 100 cc. containing 0.1 gm. of the chemical in each test was exposed 24 hours to sunlight, then tested for gum and color.

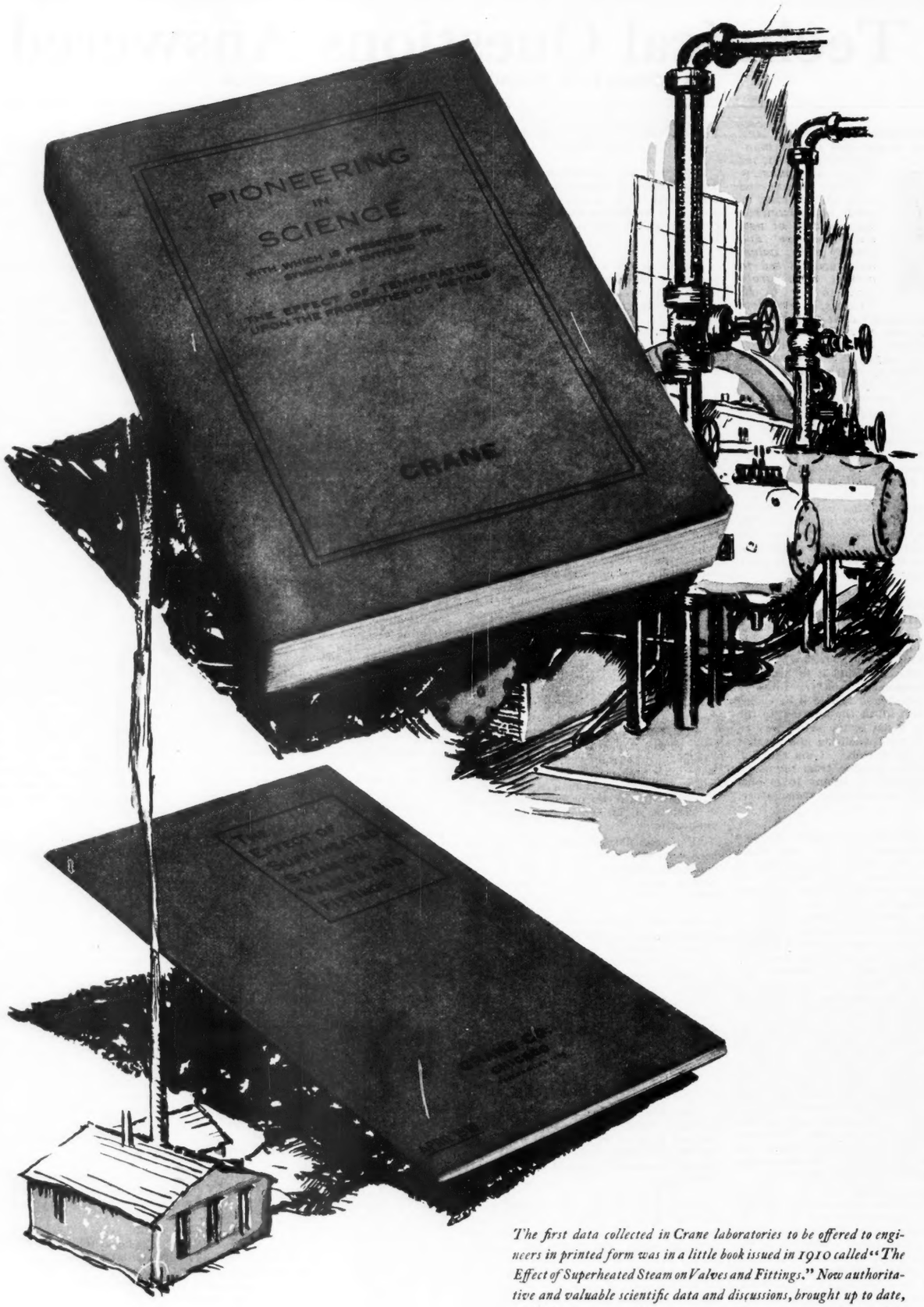
Color after exposure, no stabilizer	17
Gum, mgs./100 cc. glass dish before	6
Ditto after exposure	15

Stabilizer—	Color after 24 hours sunlight	Mgs. gum from 100 cc. in glass dish
Gum Camphor	22	20
Phenanthrene	21	6
Urea	21	6
Pseudo-cumene	21	9
Acenaphthene	21	9
α-Methyl Naphthalene	20	14
Anthracene	20	14
Naphthalene	20	2
Fluorene	20	11
Tetralin	19	13
β-Naphthol	19	14
Hydroquinone	19	12
Phthalic anhydride	19	4
Phthalimide	17	7
60 per cent Carbazol	15	6
Pyrene	10	2

The gum experiments are shown in Table 7, based on 24 hours exposure of portions of the same gasoline.

Chemical inhibitor—	Mgs. gum glass dish method
Naphthalene	2
Pyrene	2
Phthalic anhydride	4
Urea*	6
60 per cent Carbazol	6

*Urea in another gasoline increased the gum; the gasoline after exposure to sunlight showed six milligrams and the gasoline plus urea, 78 milligrams. This behavior emphasizes the fact that a chemical will not necessarily act as an inhibitor under all conditions.



The first data collected in Crane laboratories to be offered to engineers in printed form was in a little book issued in 1910 called "The Effect of Superheated Steam on Valves and Fittings." Now authoritative and valuable scientific data and discussions, brought up to date, of high pressure and temperature effects on metals is found in "Pioneering in Science." We will gladly send oil and gas men a copy.

GROWTH OF AN IDEA

1855
SEVENTY-FIFTH
ANNIVERSARY
1930

In 1888, R. T. Crane, founder of Crane Co., ordered a laboratory established for chemical control of raw materials. It was the first foundry laboratory in the Middle West and perhaps in the United States.

In the first days of higher pressures and temperatures, Mr. Crane stepped into the then small laboratory and asked tests of three valve metals under the new service conditions. They were the first such tests to be made by a valve manufacturer. In 1910, the scientific data collected was published in a little Crane book: "The Effect of Superheated Steam on Valves and Fittings."

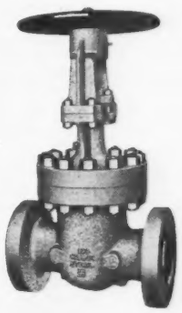
In 1912, in the Transactions of the International Association for Testing Metals, L. W. Spring and I. M. Brogowsky, Crane metallurgists, published high temperature and pressure curves for cast steel, the first to be offered by a valve maker. They became very nearly the "bible" of engineers in planning high pressure and temperature layouts.

In 1928, at the annual meeting of the American Society for Testing Materials, Mr. Spring and J. J. Kanter, Crane testing engineer, presented a monograph on "flow" tests of carbon steel, defining the limits of safety of piping materials under long time use.

These are a few high spots of Crane pioneering in piping science. As Crane Co. itself has grown from a one-man shop to a world organization through the power of an idea . . . the idea of conscientious service . . . Crane materials have progressed to their present standards through the power of the idea of exact knowledge.

In order that the knowledge gained may be available to oil and gas men everywhere, Crane Co. maintains a piping advisory service with specialists placed at strategic points throughout the country. A request will bring them to you.

When scientific testing of valve metals was begun, such a valve as this cast iron one that would control pressures of 125 pounds was a wonder.



Now, this Series 150 cast steel valve is a super-strong specimen of the complete Crane cast steel line, used in high pressure cracking processes throughout the world. It controls pressures of 1500 pounds at 750° F.

CRANE

PIPING MATERIALS TO CONVEY AND CONTROL STEAM, LIQUIDS, OIL, GAS, CHEMICALS

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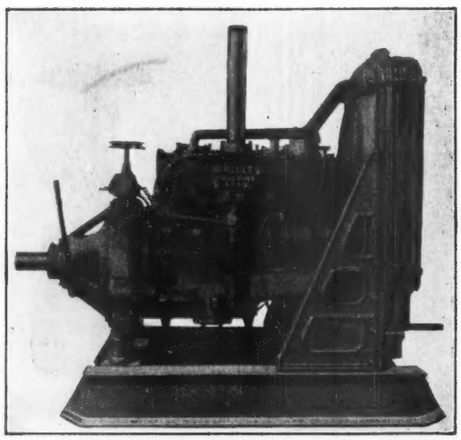


Several models of Hercules Engines are now offered as industrial power units. Above is shown one of these equipped with a Twin Disc Clutch of the most efficient type and size for the work the engine is designed to do.

PARTS STATIONS

Boston, Mass.—Rapp-Huckins Co., Inc., 138 Beverly St.
Buffalo, N. Y.—Edward W. Rode, 45 A. St.
Cleveland—Industrial Engine Parts, Inc., 1053 E. 61st St.
Chicago—Motive Parts Co. of America, Inc., 2419 Indiana Ave.
Des Moines—Motive Parts Co. of America, Inc., 1204 W. Grand Ave.
Detroit—Whitney Brothers, 6464 Epworth Blvd.
Fort Worth, Tex.—Fort Worth Wheel & Rim Co., 312 Throckmorton St.
Houston, Tex.—Portable Rig Co., Inc.
Knoxville, Tenn.—Automotive Equipment & Supply Co.
Los Angeles—Coast Machinery Corporation, 406 E. Third St.
New York City—John Reiner & Company, Inc., 309 Church St.
Philadelphia, Pa.—Maerky Machine Works, 240 Cherry St.
Pittsburgh, Pa.—A. H. Krigger & Co. Smithfield & Carson Sts. Court 2496.
Raleigh N. C.—Motor & Equipment Co., 215 E. Davie St.
San Francisco—F. Somers Peterson Co., 57 California St.
Seattle, Wash.—Pacific Hoist & Derrick Company, 818 First Ave. South.
Tulsa, Okla.—Buda Engine Service Co. of Tulsa, Inc.

Clutch Service *of* Proven Value

THROUGH courtesy of the Hercules Motors Corporation we show one of several models of Hercules engines now offered with Twin Disc clutches as standard equipment.

Hercules engines have a splendid reputation for efficient performance under difficult and exacting conditions. The manufacturers cannot afford to hazard this reputation. It is evident, therefore, that Twin Disc clutches meet Hercules requirements for power transmission.

We offer this same service to all internal combustion engine manufacturers, and also to manufacturers of material handling and industrial machinery. We have specialized on heavy duty clutches since 1917. Our line includes more than 500 models, in various types, styles and sizes developed to meet practically all heavy duty requirements. We have also developed a service organization, with parts stations in 17 principal cities, to minimize delays due to accidents.

Whatever your clutch needs may be, write.

TWIN DISC CLUTCHES

TWIN DISC CLUTCH COMPANY

RACINE WISCONSIN

WILDCAT OPERATIONS IN SOUTHWEST TEXAS

(Continued from Page 46)

F. P. Zoch's No. 1 Steinman, John Garelli Sur., 976 ft. from SW line, 1,797 ft. from NW line ..... T. D. 3,598 ft.; drill stem frozen.
H. T. Roe's No. 1 Leinhardt ..... T. D. 1,750 ft.; shut down.

DIMMITT COUNTY

Texas Fuel Gas Co.'s No. 1 City Nat'l Bank (Laxon) .... T. D. 680 ft.; depth corrected.

DUVAL COUNTY

National Oil Co.'s No. 2 Ball, Agua Poquita Sur., Blk. 3.. Drlg. 2,495 ft. in sandy shale.
F. P. Zoch's No. 1 King, Blk. 25, Hoffer and Smith Subd., W. R. King ranch, Diego Hinijosa grant, 660 ft. N line, 660 ft. E line ..... T. D. 800 ft.; drlg.
Southern Oil Co.'s No. 1 Welder Wood, Sur. 215 ..... T. D. 750 ft.; standing waiting on water.

EDWARDS COUNTY

A. M. Griffith's No. 1 Wardlaw ..... Shut down 3,000 ft. awaiting orders; expect to drill deeper.

FRIO COUNTY

Frank B. LeFeure's No. 1 H. W. and R. L. Eschenburg, Edward Gallagher Sur. No. 789, 3,980 ft. W of SE cor. of Edward Gallagher Sur. No. 788 and 1,320 ft. S of N line of Edward Gallagher Sur. No. 789 .... Location.

GOLIAD COUNTY

Compton Oil Co.'s No. 1 Fromme, Dexter Sur. ..... Standing.
Wm. F. Morgan's No. 1 George Ray in Pedro Trevano Sur., 150 ft. from SE and NW line of George Ray 627-a. tract ..... Rigging up.

GONZALES COUNTY

Acme Oil & Royalty Corp.'s No. 1 Weber, Thomas Wright Sur. ..... T. D. 1,595 ft.; shut down in sandy shale.

Fitzsimmons & Perrinot's No. 1 Z. Huber, 2,100 varas from NW line, 1,450 varas from NE line (river) of survey, 2¾ miles SE of Darst Creek in Stephen Smith Sur. ..... T. D. 1,200 ft.; drlg. in shale.
Joe Bruner's No. 1 R. D. and J. C. Miller in David J. Kent Sur., 3,040 ft. N line, 200 ft. E line ..... T. D. 3,490 ft.; shut down.
Adams & Lyles' No. 1 Jackson Sur. ..... T. D. 1,575 ft.; drlg. in shale.
Linderman Brothers' No. 2 F. H. Frampton, in Richard Heath Sur. ..... Derrick.
Finnell & Elam's No. 1 Robinson, Liverpool Sur. ..... T. D. 1,720 ft.; shut down.
United North & South's No. 1 J. A. Kerr, in James Bowman Sur., 150 ft. S of CNL of tract, 11 miles W from Waelder ..... Drlg. in Georgetown 5,427 ft.
A. G. Keiffer's No. 1 B. B. Dix ..... Drlg. in Taylor marl 2,800 ft.; drill stem stuck.

GUADALUPE COUNTY

Pagenkopf & Kennon's No. 1 Halm, Joseph Kent Sur., 5 miles E of Seguin ..... P. B. from 2,030 ft.; will shoot at 1,622-45 ft. in chalk.

HAYS COUNTY

E. A. Bucklin's No. 1 A. Elsner ..... T. D. 1,800 ft.; drlg. in lime.
John H. Foster, trustee's No. 2 W. G. Barber, 7 miles SE of Buda ..... T. D. 671 ft.; shut down.

JACKSON COUNTY

Wright Brothers' No. 7 Drushell ..... Standing 3,875 ft.

JIM HOGG COUNTY

Deep Rock Oil Co.'s No. 1 Kelsey ..... Standing 2,582 ft.
L. M. Holden's No. 4 Jones, 1,820 ft. to N line, 1,320 ft. to E line of 160 acres out of Share 5 "A," Dego Hinojosa grant ..... Standing 42 ft.

JIM WELLS COUNTY

E. W. Ogden's No. 1 G. Farris, M. Perez Sur. ..... T. D. 2,615 ft.; standing.

KARNES COUNTY

Ruby & Claypool's No. 1 Tom V. Zepeda Sur., 850 ft. N line, 1,600 ft. E line ..... Shut down in shale at 1,238 ft.
Benedum-Trees' No. 1 S. E. Crews, Britton Odem Sur. .. T. D. 4,550 ft.; standing.
Hurador Oil Co.'s No. 1 W. E. Porter ..... T. D. 3,400 ft.; shut down.

KERR COUNTY

D. B. Mascho's No. 1 J. L. Love, C.C.S.D.&R.G.N.G. Sur., Sec. 1,594, 5,280 ft. to N line, 1,000 ft. to W line .... Water well completed; heavy duty cable tool rig on ground (first reported as O. E. Tunstill No. 1 Love Ranch).

KENDALL COUNTY

Borgett et al's No. 1 Haag, W. Avery Sur. ..... T. D. 700 ft.; drlg.
Sterling's No. 1 Willie Werner, 2 miles NW from Borgett No. 1 Haag ..... T. D. 924 ft.; black sulphur water, (corrected depth).

KLEBERG COUNTY

Bowen-Sarles' No. 1 Robert H. Simmons, Sec. 7, King Subd., 3 miles W from Ricardo ..... T. D. 415 ft.; standing.

KINNEY COUNTY

Lloyd Oil Co.'s No. 1 G. B. Moore, Sur. 117 ..... T. D. 3,000 ft.; producing sulphur water.

A. Blume et al's No. 2 Herbst, 1,731 ft. W and S lines of Sur. in the Poindexter-Burns Sur. ..... Rigging up cable tools.
Mardon Oil Co.'s No. 2 Jim Clamp, in the John Winters Sur. No. 346, near No. 1 ..... Moving in cable tools.

LEE COUNTY

Byrd et al's No. 1 H. L. Bastie, 1,200 ft. N and 1,000 ft. E of 80-ac. tract of Wm. Johnson ..... Drlg. 3,000 ft.
Texas-Louisiana Carbon Corp.'s No. 1 Bryan, in the S. F. Austin Sur., 1,200 ft. N and W of 1,200-ac. farm ..... Shut down 3,120 ft.
Todor Oil Corp.'s No. 1 H. Zsesch, in the J. Meeks Sur., 150 ft. N and 900 ft. W of S. Meeks Sur. ..... Shut down 2,050 ft.

LIVE OAK COUNTY

O'Neil & Catlett's No. 1 Smith, 900 ft. SW line, 150 ft. NW line ..... T. D. 3,505 ft.; to carry test to 4,500 ft. or production.

Dr. J. K. Rowan Co.'s No. 1 Lynne Ranch, 171 ft. W of George West ..... Location.
Simmons Oil Co.'s No. 1 Richard Coquat, in James C. Hill Sur., 2,250 ft. to S line, 1,750 ft. to E line, 7 miles NE of Oakville ..... T. D. 2,400 ft.; drlg.

MAVERICK COUNTY

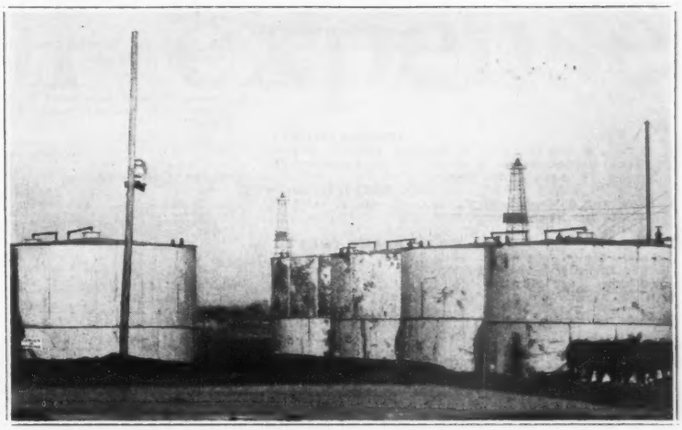
Rycade Oil Corp.'s No. 4 J. M. Chittim ..... T. D. 6,130 ft.; pulling csg. to abandon.
Rycade Oil Corp.'s No. 5 Chittim ..... T. D. 3,442 ft.; standing; hole full of sulphur water.
Rycade Oil Corp.'s No. 3 Chittim, Blk. 7, Sur. 116, H.& G.N., 175 ft. N of No. 1, 10 ft. W. 225 ft. S line .... T. D. 6,500 ft.; drlg. in lime rock; making 50 bbls. oil, 12,000,000 ft. gas.

MEDINA COUNTY

Pat Armstrong's No. 1 C. W. Butts in George C. Hanson Sur. ..... T. D. 1,102 ft.; shut down.
Pan American Pet. Co.'s No. 1 Harrison, Sur. 799, 15 miles S from Hondo ..... Spudded in.
Donaldson Oil & Dev. Co.'s No. 2 Adams Co., James Hillemmeyer No. 25 Sur., 500 ft. to E line of Sur., 150 ft. to S line of N half of Sur. ..... Derrick.
T. N. T. Drilling Co.'s No. 1 V. Mangold, I. S. Palmer Sur. No. 20, SE cor., 1 mile from Noonan ..... T. D. 1,700 ft.; abandoned dry.
Pure Oil Co.'s No. 1 Nick F. Fahn in Amos Hudson Sur. No. 587, near NW line of Sur. ..... Core drilling.
Cecil Switzer's No. 1 Zerr, 6 miles west of Hondo ..... T. D. 3,710 ft.; fishing for tools.
R. C. Hill's No. 1 A. Wurzbach, G. Areola Sur., 500 ft. E line, 600 ft. S line ..... Location.

MILAM COUNTY

Service Oil & Gas Co.'s No. 1 Muldrow, L. Taylor Sur., SE cor. ..... Location.
Hill & Bonwell's No. 1 B. Booker, James Welch Sur. .. Fishing 2,920 ft.
Lloyd Oil Corp.'s No 1 San Clement, Fokes Sur. ..... Spudded in.



Eight 1000-Bbl. Maloneys erected on Thompson Consolidated No. 1, at Oklahoma City, for I.T.I.O. Co., by distributer, Maloney Sales Corporation.

Common Sense Demands Conservation of Your Resources

Hundreds of operators are spending money for oil production — and then allowing the oil to be needlessly wasted by the breathing of lease tanks. Common sense demands the use of tanks which *eliminate* this unnecessary waste.

Our Vapor-Pressure Stock and Flow Tanks restrict the breathing which dissipates valuable oil and gas into the atmosphere. It is plain common sense to use tanks which conserve your resources and increase your net income.

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MALONEY TANK MFG. COMPANY
Tulsa, Okla., U. S. A.
Distributers at All Principal Petroleum Points

Maloney A.P.I. Bolted Steel Tanks conform to A.P.I. dimensional standards, and carry the official A.P.I. monogram.

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MALONEY PATENTED BOLTED COPPER-STEEL TANKS

MALONEY ALONE!

A. H. Wray's No. 1 D. D. Fowler ..... T. D. 1,688 ft.; sidetracked 360 ft. of drill pipe lost in hole; now drlg.

McMULLEN COUNTY

Cowboys Oil Co.'s No. 1 Shiner, H. M. Brewer Sur. .... T. D. 2,280 ft.; overhauling rig preparing to deepen.

Southern Crude Oil Purch. Co.'s No. 1 J. B. Baker, 2,310 ft. from S and E lines of Sec. 7 in the F. M. Lowe Sur. ..... No announcement has been made as to when actual work will begin.

NUECES COUNTY

H. Grimm et al's No. 1 A. R. Roberts, Blk. 79,, Winter Vegt. Garden Subd., 6 miles NW of Robstown, 12 miles NE Agua Dulce Field ..... T. D. 2,426 ft.; standing.

SAN PATRICIO COUNTY

LaFeria Oil & Gas Co.'s No. 1 C. C. Smith in J. C. White Sur., 690 ft. to N line, 350 ft. to E line ..... T. D. 2,252 ft.; set 6⅝-in. csg. 2,246 ft.

STARR COUNTY

Adams, Scanlon, Scanlon & Wright's No. 1 Margo, Por. 71, Jurisdiction of Mier, 1,921 ft. W line, 430 ft. N line ..... Standing at 30 ft.

Smith & Adams' No. 1 Welch, Pedernal Sur. ..... Standing at 631 ft.

UVALDE COUNTY

Waldrop & Welch's No. 1 H. S. Benson, 2 miles NW of Uvalde ..... T. D. 750 ft.; drlg. in hard dense lime.

Phantom Oil Co.'s No. 1 Claudt, Sur. 661 ..... Building derrick.

WILLACY COUNTY

Weimer-Richardson's No. 1 Elmore ..... T. D. 1,860 ft.; shut down in gumbo.

WILLIAMSON COUNTY

Harlem et al's No. 1 H. H. Stiles, in the J. Bevil Sur., 220 ft. N and 330 ft. E of Sur. ..... Rigging up.

Powell & Kydendall's No. 1 Christian Mager in the W. Byerly Sur., 150 ft. N and 450 ft. E of farms of 150 acres ..... Shut down 1,501 ft.

WILSON COUNTY

Trinity Drillers' No. 1 Richter, in Trevino Sur., 3,005 ft. to E line, 250 ft. to N line of 58-ac. lease ..... T. D. 4,960 ft.; dry and abandoned.

Rycade Oil Corp. et al's No. 1 George Hice, Juan Delgado Sur., 650 ft. W of Cibolo River, 150 ft. SE line of tract ..... T. D. 3,066 ft.; drlg. broken lime.

ZAPATA COUNTY

R. F. Blankenship's No. 1 G. T. Montemeyer, Sur. 45, Blk. 7, 150 ft. N and E lines ..... T. D. 1,321 ft.; bailing and swabbing; showing little oil.

O. W. Killam's No. 1 J. G. Martinez Sur. No. 2, 550 ft. W line, 150 ft. S line of SE of Sur. ..... T. D. 1,925 ft.; comp. 50,000,000 ft. gas, 720 lbs. rock pressure.

John Pappas' No. 2 Cuellar, Por. 33 and 34 ..... T. D. 1,856 ft.; sand 1,850-56 ft.

National Oil Co.'s No. 1 D. B. Adams ..... T. D. 690 ft.; shut down; lack of water; making considerable gas.

ZAVALA COUNTY

Tritex Oil Co.'s No. 1 Clay Burns ..... T. D. 780 ft.; standing.

Tritex Oil Co.'s No. 2 Childress, one-fourth mile NW of old Dominion Co.'s No. 1 Pryor ..... Drlg. 650 ft.

Weigand Brothers' No. 1 W. L. Gates, Hooper & Wade Sur. No. 13, 1,320 ft. S of N line, 1,220 ft. W of NE cor. Sur., about 16 miles S of Batesville ..... T. D. 675 ft.; coring sand; report strong gas show.

Jack Baldwin's No. 1 J. R. Price, in the W. E. Erskin Sur. No. 34 ..... Spudded in and shut down.

Southern Crude Oil Purch. Co.'s No. 1 Nat M. Washer in the T. Pinckhardt Sur. No. 180, 1 deg. E, 6,795 ft. from SE cor. ..... Having trouble setting surface csg. as cellar keeps caving.

Texas Gas & Fuel Co.'s No. 2 West in the W. Zuniga Sur. ..... T. D. 1,818 ft.; shut down; estimated 4,000,000 ft. gas; hole full salt water.

Texas Fuel & Gas Co.'s No. 4 West Sur. 44 ..... T. D. 1,025 ft.; drlg. in blue shale; to be drilled to 2,500 ft.

Texas Fuel & Gas Co.'s No. 1 Matthews in upper Byrd Ranch ..... T. D. 450 ft.; drlg. in shale.

LOUISIANA-ARKANSAS PROVEN AREAS

(Continued from Page 49)

The Texas Co.'s No. 2 Peyton, 990 ft. N, 330 ft. W, SE cor., Sec. 25-23-12 ..... Derrick.

The Texas Co.'s No. 3 Peyton, 990 ft. N, 990 ft. E, SW cor., Sec. 30-23-11 ..... Derrick.

The Texas Co.'s No. 1 J. W. Wilkinson, 660 ft. N, 660 ft. W, SE cor. NE, Sec. 36-23-12 ..... O.W.D.D; completed Oct. 1, '27; 23,000 ft. gas in 2-ft. sand; T. D. 3,073 ft; rigging up to deepen.

John Woodley et als' No. 2 L. & A., 990 ft. N, 990 ft. W, SE cor., Sec. 14-23-12 ..... Completed Mar. 30, '26, flowing 200 bbls. fluid, 80% S.W; 4-ft. sand; T.D. 3,081 ft; rigging up to deepen.

Woodley et als' No. 1 Roberson, 330 ft. N, 330 ft. W, SE cor. SW NE, Sec. 22-23-12 ..... Rig up.

CADDO PARISH—HOSSTON

Bayou State Oil Corp.'s No. 29 Jolly, 425 ft. W, 775 ft. N, SE cor. NE ..... Completed Jan. 21; production 10 bbl., 1,003 ft.

Bayou State Oil Corp.'s No. 18 Levee Board, 450 ft. N, 150 ft. E, SW cor. NW, Sec. 23-22-15 ..... W.O.S.R; T.D. 1,003 ft.

Bayou State Oil Corp.'s No. 5 Owens, 1,220 ft. S, 560 ft. W, C, Sec. 21-22-15 ..... W.O.S.R. 1,023 ft.

CADDO PARISH—DIXIE

Dixie Oil Co.'s No. 1 B. Dickson, 300 ft. N, 300 ft. E, SW cor., Sec. 10-19-14 ..... Location.

Sam Gold's No. 3 Hunter, 660 ft. N, 660 ft. W, SE cor. SW NE, Sec. 17-19-14 ..... 200 ft. oil and S.W. in hole 2,417 ft; W.O.S.R; topped broken sand 2,415 ft.

Lide et als' No. 1 Dickson heirs, 795 ft. N, 200 ft. E, SW cor., Sec. 10-19-14 ..... Cmtd. 6⅝-in. 2,400 ft; W.O.S.R. 250 ft. oil; T.D. 2,458 ft.

CADDO PARISH—MOORINGSPORT DISTRICT

Falcon Oil Co.'s No. 2 Nunnely, 3,012 ft. N, 3,091 ft. E, SW cor., Sec. 29-20-15 ..... Began drlg. Jan. 18; S.D. 92 ft. account high wtr.

CADDO PARISH—OIL CITY

Gulf Ref. Co.'s No. 23-A Levee Board, 1,590 ft. S, 1,120 ft. W, NE cor. NW ..... S.W.; S.G. 915 ft; dry 1,665 ft; reaming to bottom.

H. M. Matson's No. 1 U. S. Govt., 900 ft. E, 400 ft. S, NW cor., Sec. ..... S.D. 600 ft.

P. T. Mize's No. 1 La. O. R. Corp., 445 ft. N, 100 ft. E, SW cor. SE, Sec. 1-20-16 ..... S.D. 1,880 ft.

The Texas Co.'s No. 72 Levee Board, 725 ft. N, 210 ft. E, SW cor. SE, Sec. 27-21-16 ..... Rigging up.

Thompson & Fitzsimmons' No. 1 Howell, 600 ft. S, 300 ft. W, NE cor. SE, Sec. 13-22-16 ..... Coring 2,400 ft.

PINE ISLAND

Shreveport Oil Corp.'s No. 4 Hicks, Sec. 32-19-15 ..... Began drlg. Jan. 24; cmtd. 12½-in. 100 ft; S.D. 300 ft.

Simplex Oil Co. et als' No. 1 Tom Thomas, 200 ft. N, 660 ft. W, SE cor. NE, Sec. 15-20-15 ..... Drlg. 2,110 ft.

CLAIBORNE PARISH—HOMER

Oakes et als' No. 1 Richardson, NE SE, Sec. 19-21-17 .. S.D. 1,700 ft.

LA SALLE PARISH—URANIA

Ark. Fuel Oil Co.'s No. 5 Urania, 200 ft. S, 200 ft. E, NW cor. NE SE, Sec. 24-10-1e ..... Drlg. lime 4,389 ft.

Kinney, Hardtner & Randall's No. 1 Kinney, SW SW, Sec. 7-10-2e ..... S.D. 1,570 ft.

S. D. Ray's No. 1 Urania, Sec. 19-10-2e ..... 1,200 ft. oil, some S.W; 3-ft. sand; W.O.S.R. 1,568 ft.

MOREHOUSE PARISH

Bahan & Bahan's No. 3 Feazel, 990 ft. S, 990 ft. W, NE cor., Sec. 3-20-4 ..... Cmtd. 6-in. 2,088 ft.

Bahan & Bahan's No. 4 Feazel, 900 ft. W, 330 ft. S, NE cor., Sec. 3-20-4 ..... Location.

J. B. Bond's No. 1 Haynes, 400 ft. N, 400 ft. E, SW cor., Sec. 34-21-5 ..... Began drlg. Jan. 24; drlg. 110 ft.

Consolidated Carbon Co.'s No. 2 White, Sec. 16-20-4 .... Drill stem stuck 2,115 ft.

J. S. Herkness' No. 12 Bowles, 3,392 ft. E, 3,300 ft. S, NW cor., Sec. 18-20-5 ..... Cmtd. 9-in. csg. 2,190 ft; arranging test 2,260 ft.

Magnolia Pet. Co.'s No. 8 U. S. Govt., 310 ft. S, 410 ft. E, NW cor., Lot 4, Sec. 33-21-5 ..... Cmtd. 15½-in. 204 ft.

Nat. Gas Prod. Co.'s No. 25 Crossett Lbr. Co., 1,444 ft. S, 793 ft. W, NE cor. NW, Sec. 29-21-5 ..... Cmtd. 12½-in. 169 ft.

J. A. Noe et als' No. 1 Wright, 694 ft. N, 393 ft. W, C, Sec. 27-20-4 ..... Location.

Southern Carbon Co.'s No. 14 Tensas, 660 ft. N, 660 ft. E, SW cor. NW, Sec. 34-21-4 ..... S.D. account high wtr; T.D. 2,081 ft.

United Carbon Co.'s No. 2 Patton, 660 ft. N, 660 ft. E, SW cor. SE, Sec. 2-20-4 ..... Location.

United Carbon Co.'s No. 3 Patton, 660 ft. W, 660 ft. S, NE cor. SE, Sec. 2-20-4 ..... Location.

OUACHITA PARISH

Amalgamated Carbon Co.'s No. 2 Cole, 742 ft. E, 703 ft. S, NW cor., Sec. 43-19-4 ..... Cmtd. 8-in. 890 ft; drlg. 2,116 ft.

Chauvin Gas Co.'s No. 4 Slagle Johnson, 647 ft. W, 2,803 ft. S, NE cor., Sec. 47-18-4 ..... Rig up.

Hope Prod. Co.'s No. 1 Fairbanks, 660 ft. N, 624 ft. E, SW cor. SE, Sec. 25-20-4 ..... Arranging to plug back; T.D. 2,383 ft.

Hope Prod. Co.'s No. 2 Fairbanks, 1,876 ft. E, 628 ft. N, SW cor. SE, Sec. 25-20-4 ..... Location.

Hope Prod. Co.'s No. 3 Fairbanks, 1,876 ft. E, 628 ft. S, NW cor. NE, Sec. 36-20-4 ..... Location.

G. E. Jordan's No. 1 Anding, NW NE, Sec. 18-18-5 ..... Plugging back to 2,234 ft; T.D. 2,480 ft.

La. Gas & Fuel Co.'s No. 1 Beard, Sec. 46-18-4 ..... Cmtd. 6-in. 2,143 ft.

Magnolia Pet. Co.'s No. 2 fee 401, 660 ft. S, 660 ft. E, NW cor., Sec. 2-18-3 ..... Derrick.

Magnolia Pet. Co.'s No. 4 U. S., Sec. 20-19-5; reported completed July 31, in error ..... Tested 1,000,000 ft. gas at 515 lbs. rock pres.; set liner 2,528 ft; bailed dry; plugged back to 2,200 ft; estimated 500,000 ft. gas; waiting orders 2,528 ft.

New Process Carbon Co.'s No. 2 Cole, 1,971 ft. E, 1,820 ft. N, SW cor., Sec. 35-20-4 ..... D.S. tests 10-ft. sand at 2,810 ft. and 8-ft. sand at 2,857 ft; dry; arranging to plug back to 2,180 ft.

Sho-Van Gas Products Co.'s No. 3 W. Va., 1,980 ft. S and W, NE cor., Sec. 8-18-4 ..... Cmtd. 6-in. 2,145 ft.

Sho-Van Gas Products Co.'s No. 4 W. Va., 1,078 ft. N, 294 ft. W, NE cor., Sec. 49, in Sec. 7 ..... Rig up.

Union Gas Products Co.'s No. 1 Hare, 660 ft. S, 660 ft. W, NE cor. NW, Sec. 22-19-5 ..... Bailed dry 2,357 ft; S.D. 2,377 ft.

United Oil & Nat. Gas Products Co. of La.'s No. 5 Guthrie, 6,896 ft. N, 6,022 ft. W, cor. Secs. 49, 26, and 25, Sec. 49-20-5 ..... Derrick.

United Carbon Co.'s No. 2 Puckett, 660 ft. N, 660 ft. E, SW cor. SW, Sec. 15-19-5 ..... Tested 1,500 ft. gas and spray S. W. 2,317 ft; drlg. 2,330 ft.

United Carbon Co.'s No. 4 Spade, 774 ft. S, 2,081 ft. E, NW cor., Sec. 6-18-4 ..... S.D. 2,040 ft.

United Carbon Co.'s No. 6 Spade, 1,180 ft. S, 140 ft. E, NW cor., Sec. 27-19-4 ..... Location.

United O. & N. G. Co.'s No. 2 Cole, 660 ft. S, 594 ft. E, C, Sec. 26-20-4 ..... Derrick.

RICHLAND PARISH

Ark. La. P. L. Co.'s No. 1 A. E. Purvis, 762 ft. N, 1,180 ft. W, SE cor., Sec. 34-17-6 ..... Cmtd. 9-in. 2,307 ft.

Ark.-La P. L. Co.'s No. 3-B E. A. and F. B. Sartor, 300 ft. N, 330 ft. E, SW cor., Sec. 24-16-5 ..... Location.

W. C. Feazel's No. 1 R. B. Simon, 2,406 ft. W, 2,020 ft. S, NE cor., Sec. 11-16-6 ..... Rig up.

W. C. Feazel's No. 1 E. L. Wilson, 647 ft. N, 241 ft. E, SW cor. NW, Sec. 31-16-6 ..... Drlg. 2,412 ft.

Franklin O. & G. Co.'s No. 1 F. Smith, Sec. 24-16-6 .... Cmtd. 8-in. 900 ft.

Hope Prod. Co.'s No. 1 C. M. Purvis, 632 ft. S, 1,232 ft. W, NE cor., Sec. 3-16-6 ..... Began drlg. Jan. 23; cmtd. 12½-in. 181 ft; 9-in. 901 ft.

International Gas Products Co.'s No. 1-B Beck, 660 ft. S, 713 ft. E, NW cor., Sec. 36-16-6 ..... Drlg. 1,760 ft.

International Gas Products Co.'s No. 1 Minnie La-Grone, 769 ft. N, 858 ft. E, SW cor., Sec. 7-16-7 ..... Location.

La. G. & F. Co.'s No. 1 Chapman, 2,497 ft. E, 1,980 ft. S, NW cor., Sec. 36-16-6 ..... Location.

M. L. Meredith's No. 1 Holdness, 1,980 ft. S, 990 ft. W, NE cor., Sec. 15-16-6 ..... Cmtd. 6-in. 2,282 ft.

Nat. Gas Products Co.'s No. 1-C Sartor, 536 ft. N, 1,333 ft. E, SW cor. NW, Sec. 21-16-6 ..... Drlg. 317 ft.

Palmer Corp.'s No. 1-A F. N. Boykin, 660 ft. N, 660 ft. W, SE cor. NE, Sec. 20-17-6 ..... Blew out cmt. 9-in. 925 ft.

Palmer Corp.'s No. 1-A Earl, Sec. 2-16-6 ..... Reported Jan. 22; blowout; estimated 45,000,000 ft. gas 2,498 ft; arranging to cmt. 4½-in.

Southern Carbon Co.'s No. 1 Hale, 660 ft. N, 760 ft. W, SE cor., Sec. 16-16-6 ..... 6-in. csg. stuck; T.D. 2,288 ft.

Southern Carbon Co.'s No. 1 McCoy, 1,980 ft. E, 3,300 ft. S, NE cor., Sec. 16-16-6 ..... Derrick.

United Carbon Co.'s No. 1 D. R. Sartor, 3,341 ft. W, 3,960 ft. S, NE cor., Sec. 11-16-6 ..... Derrick.

SABINE PARISH—PLEASANT HILL

Bridges-Clarke Oil Co.'s No. 1 Guy, 300 ft. N, 300 ft. E, SW cor. SE SE, Sec. 33-10-12 ..... Cmtd. 6⅝-in. 2,367 ft; T.D. 2,486 ft.

Hatcher et als' No. 1 Moore heirs, 300 ft. N, 300 ft. E, C, Sec. 32-10-12 ..... Derrick.

Magnolia Pet. Co.'s No. 2 McLeroy, 230 ft. S, 200 ft. W, NE cor. W½ SE SW, Sec. 33-10-12 ..... Rig up.

SABINE PARISH—ZWOLLE

Amerada Pet. Corp.'s No. 1 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. NE NE, Sec. 33-8-12 ..... Top chalk 2,340 ft; cmtd. 6⅝-in. 2,333 ft; T.D. 2,342 ft.

R. L. Gay, trustee's No. 6 Bowman-Hicks, 900 ft. N, 800 ft. W, SE cor. NW SE, Sec. 14-7-14 ..... Top chalk 2,102 ft; drlg. 2,255 ft.

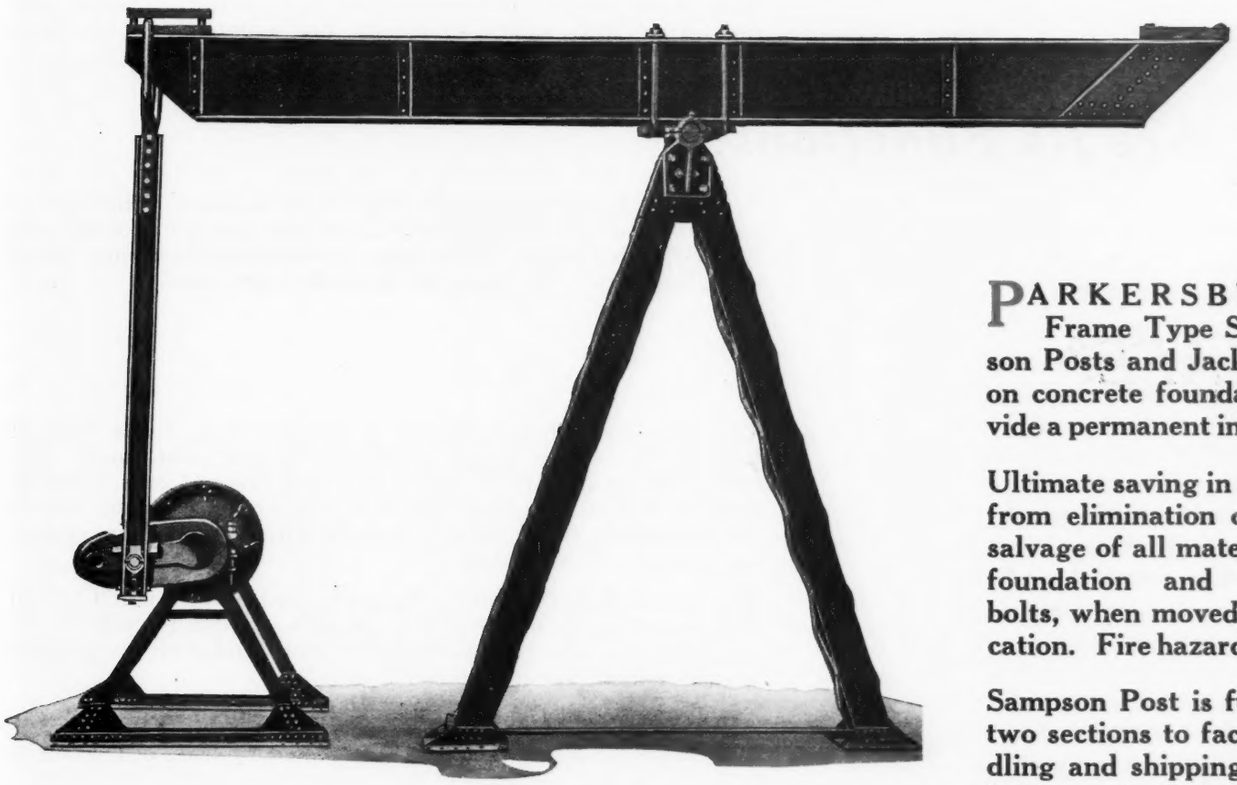
R. L. Gay, trustee's No. 2-A Bowman-Hicks Lbr. Co., 200 ft. S, 200 ft. W, NE cor. NE NW ..... Drlg. 1,267 ft.

R. L. Gay, trustee's No. 3 Sabine Lbr. Co., 1,120 ft. N, 200 ft. E, SW cor., Sec. 13-7-14 ..... Bailing to test 2,250 ft.

Haynes Bros.' No. 1 Dover, 1,120 ft. W, 200 ft. N, SE cor. NE, Sec. 28-8-12 ..... Cmtd. 6⅝-in. 2,280 ft; T.D. 2,316 ft.

Lide et als' No. 1 Sabine Lbr. Co., 330 ft. S, 330 ft. W, NE cor. W½ NE SE, Sec. 31-8-12 ..... Began drlg. Jan. 23; cmtd. 10-in. 102 ft; drlg. 1,200 ft.

Reduce well expense with Steel



"A" FRAME TYPE SAMPSON POSTS and JACK POSTS

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The term "Baker Cement Equipment" is used to identify the complete line of Baker-Made Floating, Guiding, and Cementing Equipment in which Concrete is used to replace cast-iron in guides, plugs, and valve-holding members, and Celoron is used to replace cast-iron in the valves.

The use of Concrete and Celoron has many advantages over cast-iron in strength, safety, efficiency, and economy, as has been demonstrated in oil fields all over the world.

What Are Its Functions?

As implied by the above definition, Baker Cement Equipment is used for Floating, Guiding, and Cementing casing in a well. The Baker-Burch Cement Float Shoe, for instance, combines all of these functions. The complete line fills every need.

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There has never been a failure of the new style Baker Cement Equipment, as it is today manufactured and distributed. The reason for its remarkable success is that Baker Cement Equipment is built with safety factors which enable it to be run to greater depths, safely, than is permitted by the collapsing or tensile strength of the casing.

The special Baker-Formula Concrete used in all Baker Cement Equipment has a compressive strength of 6002 pounds to the square inch—more than sufficient to withstand even the greatest stresses which may unexpectedly develop.

The Baker-Made Celoron Float Valve is equally strong.

Baker Cement Equipment is SAFE—in every sense of the world. It has been used on some of the longest strings ever put down a well—and it invariably makes good on the job.

How Many Items Are There In This Line?

There are eight different items in the complete line of Baker Cement Equipment, as follows:

Baker Cement Guide Casing Shoe
Baker Cement Bull Plug Casing Shoe
Baker-Burch Cement Float Shoe
Baker-Burch Side Hole Cement Float Shoe
Baker-Burch HIGH Side Hole Cement Float Shoe
Baker Cement Baffle Collar—with Hole
Baker Cement Baffle Collar—Solid
Baker Cement Float Collar

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Stocks carried by Dealers in all active Mid-Continent fields.

Ohio Oil Co.'s No. 1 Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor. NW SW, Sec. 35-8-12 ..... Top chalk 2,392 ft; cmtd. 6⅝-in. 2,385 ft; standing full oil; two small heads; W.O.S.R; T.D. 2,405 ft.

Ohio Oil Co.'s No. 2 Bowman-Hicks, 330 ft. N, 330 ft. W, SE cor. SE SW, Sec. 33-8-12 ..... Cmtd. 6⅝-in. 2,360 ft; tested dry 2,384 ft; arranging to deepen.

Olsen Bros.' No. 1 Keeler, SW cor. SW SE, Sec. 27-8-12.. Bailed dry 2,430 ft; 2,478 ft; and 2,493 ft; drilled to 2,625 ft; 90 ft. oil in hole; W.O. 2,625 ft.

Ruston Drlg. Co.'s No. 1 Bowman-Hicks, 330 ft. S, 330 ft. W, NE cor., Sec. 4-7-12 ..... Began drlg. Jan. 28.

Ruston Drlg. Co.'s No. 1-A Bowman-Hicks, 330 ft. S, 330 ft. E, NW cor. SW SW, Sec. 35-8-12 ..... Derrick.

Ruston Drlg. Co.'s No. 1 Holliday, 330 ft. N, 330 ft. E, SW cor. NW, Sec. 35-8-12 ..... Losing returns; drlg. rock 1,210 ft.

Sabine O. & G. Co.'s No. 1 Anderson, 200 ft. N, 200 ft. E, SW cor. SW NW, Sec. 19-18-13 ..... Drlg. 2,416 ft.

A. H. Tarver's No. 1 Sabine State Bank, 250 ft. N, 250 ft. W, C, Sec. 27-8-12 ..... Drlg. 1,200 ft.

Tippett Drlg. Co.'s No. 1 Hughes, 200 ft. S, 200 ft. E, NW cor. SW NW, Sec. 36-8-12 ..... Drlg. 1,489 ft.

Warner-Quinlan Co.'s No. 1 Sabine Lbr. Co., 238 ft. N, 328 ft. W, SE cor. NW NE, Sec. 34-8-12 ..... Drlg. 1,200 ft.

Warner-Quinlan Co.'s No. 1 Peterson, 660 ft. S, 660 ft. W, NE cor. NW SE, Sec. 26-8-13 ..... Began drlg. Jan. 24; cmtd. 12-in. 102 ft; drlg. 750 ft.

WEBSTER PARISH—COTTON VALLEY

Ohio Oil Co.'s No. 46 Bodcaw, 660 ft. N, 660 ft. E, SW cor. SW NW, Sec. 28-21-10 ..... Drlg. anhydrite 4,308 ft.

Palmer Corp.'s No. 3 Miller, 660 ft. N, 660 ft. E, SW cor., Sec. 28-21-10 ..... Cmtd. 9-in. 3,540 ft.

Standard Oil Co.'s No. 1-B Crichton, 660 ft. S, 660 ft. E, NW cor., Sec. 33-21-10 ..... Rig up.

WEBSTER PARISH—SAREPTA AND SHONGALOO

Bateman et als' No. 1 J. E. Womble, Sec. 1-22-11 ..... W.O.S.R; 1,200 ft. oil; T.D. 2,712 ft.

Bateman et als' No. 2 Womble, 2,840 ft. S, 1,120 ft. E, NW cor., Sec. 1-22-11 ..... Cmtd. 6-in. 2,701 ft; T.D. 2,715 ft; 1,500 ft. fluid; 4-ft. sand; W.O.S.R.

Donohue O. & G. Co.'s No. 1-B W. B. Roseberry, 250 ft. S, 250 ft. E, C, Sec. 19-23-9 ..... Began drlg. Nov. 25; S.D. 104 ft.

Pat Hudson's No. 2 S. Gardner, 330 ft. N, 300 ft. E, C, Sec. 1-22-11 ..... Derrick.

Pat Hudson's No. 1 B. L. Slack, 330 ft. W, 330 ft. N, SE cor. SW, Sec. 36-23-11 ..... Rig up.

Jacob Luskin's No. 2 Pardee, 1,270 ft. W, 50 ft. S, NE cor. NW, Sec. 3-22-11 ..... W.O.S.R. 2,656 ft.

Magnolia Pet. Co.'s No. 1 J. P. Baker, 1,120 ft. S, 225 ft. E, NW cor. SW, Sec. 35-22-11 ..... Drlg. sandy shale 3,244 ft.

Magnolia Pet. Co.'s No. 2 Denman, 100 ft. N, 160 ft. W, SE cor. NE NW, Sec. 1-22-11 ..... Cmtd. 15½-in. 314 ft.

Merritt & Merritt's No. 1 Boucher (no check), SE SE, Sec. 17-23-11 ..... Rig up.

Sarepta Oil Co.'s No. 1 L. S. Gardner, 300 ft. S, 300 ft. W, C, Sec. 1-22-11 ..... W.O.S.R; 600 ft. fluid; T.D. 2,719 ft.

ARKANSAS

JOHNSON COUNTY—CLARKSVILLE

Ark.-La. P. L. Co.'s No. 1 Patterson, 1,020 ft. S, 2,570 ft. E, NW cor., Sec. 14-10-24 ..... Cmtd. 13⅜-in. 1,500 ft.

NEVADA COUNTY

Roy Davis et als' No. 1 Chas. Henry, 1,120 ft. N, 1,120 ft. W, SE cor., Sec. 10-12-20 ..... Derrick.

C. F. Steele's No. 1 E. W. Groves, Sec. 21-14-20 ..... Shut down.

OUACHITA COUNTY—SMACKOVER

L. H. Hamilton's No. 1 Arnold & Doyle, SE SE, Sec. 23-15-16 ..... Waiting on power to pump; T.D. 2,010 ft.

Southern Producing Co.'s No. 3-A Watts, 700 ft. E, 150 ft. N, SW cor. SE SW, Sec. 27-15-15 ..... Derrick.

Standard Oil Co.'s No. 11 Powell, 150 ft. S, 150 ft. E, NW cor. NE NW, Sec. 34-15-15 ..... Began drlg. Jan. 24; cmtd. 10-in. 82 ft; drlg. 1,093 ft.

J. D. Wingfield's No. 1 Martin, SW cor., Sec. 26-15-15 .. Set 6⅝-in. 2,085 ft; tested little oil and S.W; W.O; T.D. 2,115 ft.

OUACHITA COUNTY—STEPHENS

Magnolia Pet. Co.'s No. 1 Grayson, C, Lot 30, NE SE, Sec. 21-15-19 ..... D.S. test 1½-ft. sand; 6 joints heavy oil; cmtd. 8⅛-in. 1,466 ft; T.D. 1,478 ft.

UNION COUNTY—CHAMPAGNOLLE

Ohio Oil Co.'s No. 1 J. M. Gregory, 30 ft. S, 330 ft. W, NE cor. SW SE, Sec. 1-17-14 ..... Drlg. 6⅝-in. 3,007 ft; T.D. 3,017 ft.

UNION COUNTY—EL DORADO

H. L. Hunt's No. 6 Pratt, 150 ft. N, 330 ft. E, SW cor. NE NE, Sec. 7-18-15 ..... Drlg. 2,203 ft.

Malloy & Co.'s No. 4 Goodwin, 300 ft. N, 300 ft. E, SW cor. NE NE, Sec. 36-17-16 ..... Derrick; Nos. 1, 2 and 3 drilled by Constantine O. & G. Co.

Malloy & Co.'s No. 3 Robertson, NE cor. S½ SW NE, Sec. 6-18-15 ..... Location.

Rice et als' No. 1 W. Ralty, 150 ft. S, 150 ft. E, NW cor. SW, Sec. 7-17-15 ..... Spudded July 18; cmtd. 10-in. at 92 ft.

Weisinger et als' No. 1 Lacy, 181 ft. S, 557 ft. W, NE cor. NW, Sec. 6-18-15 ..... Cmtd. 6⅝-in. 2,131 ft.

Weisinger & Ball's No. 1 Rogers, 1,014 ft. N, 150 ft. E, SW cor. E½ SW SE, Sec. 31-17-15 ..... Began drlg. Jan. 18, cmtd. 12½-in. 175 ft.

UNION COUNTY—SMACKOVER

E. L. Champan's No. 2 Bradley, 330 ft. N, 330 ft. E, SW cor. Lot 3, NW, Sec. 2-16-16 ..... Derrick.

Lion Oil Ref. Co.'s No. 1 James, CWL, Lot 2, NW, Sec. 6-16-15 ..... T.A. 2,018 ft.

Root Refineries, Inc.'s No. 8 Calloway, 510 ft. S, 150 ft. W, NE cor., Sec. 4-16-15 ..... Drlg. plug 2,248 ft; T.D. 2,287 ft.

Skelly Oil Co.'s No. 8-A Alphin, 1,320 ft. S, C, Sec. 24-16-16 ..... W.O.S.R. 2,116 ft.

EAST TEXAS

PANOLA COUNTY

Ark.-La. P. L. Co.'s No. 9 Werner, 1,750 ft. S, 1,052 ft. W, NE cor., E. F. Mitcheson Sur. ..... Completed Jan. 22; 1,100,000 ft. gas 2,343 ft.

Ark.-La. P. L. Co.'s No. 11 Werner, 1,850 ft. S, 1,052 ft. W, NE cor. E. F. Mitcheson Sur. ..... Rig up.

Calatex O. & G. Co.'s No. 3 Caldwell, 243 ft. S, 1,034 ft. W, SE cor. John Womack Sur., in Jas. Shadoin Sur. ..... Began drlg. Dec. 28; cmtd. 10-in. 42 ft; D.S. test 1,067 ft; S.W. and show of gas; S.D; W.O; Nos. 1 and 2 drilled by M. A. Smith et al.

S. H. Gardner's No. 4 Rocquemore, 5,176 ft. E, 4,432 ft. S, NW cor. B. C. Jordan Sur. ..... Rigging up.

Magnolia Pet. Co.'s No. 6 G. C. Tiller, 393 ft. S, 1,990 ft. E, NW cor. Jane Tharp Sur. ..... Drlg. 2,864 ft.

Nat. Gas Prod. Co.'s No. 8 Roquemore, B. C. Jordan Sur. Drlg. 3,150 ft.

Nemours Corp.'s No. 4 Brumble, 200 ft. N, 200 ft. W, SE cor. E. F. Mitcheson Sur. ..... Bailing to test 2,340 ft.

The Texas Co.'s No. 4 H. L. Brumble, 945 ft. E, 745 ft. N, SW cor., E. F. Mitcheson Sur. ..... Rig up.

D. Thompson's No. 4 Tiller, Jas. Story Sur. ..... Cmtd. 6⅝-in. 3,160 ft.

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—to discharge continuously

—or to discharge intermittently into especially low pressure or very high pressure distributing systems.

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(Pilot Valve Type for High Inlet Pressure)

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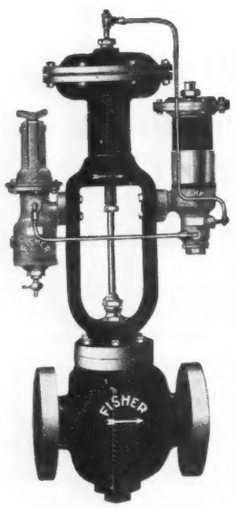
The 2200 SERIES CONTROLLER provides all-purpose, ultra-sensitive, pilot-operated control for reducing pressures, holding back pressures, maintaining differential pressures and sustaining vacuums — within close limits.



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The 2200 Master Control Designed For Panel Board Unit

It is especially designed for these types of installations:

(1) Where ultra-sensitive control is required.

(2) Where initial pressures drop close to desired reduced pressures.

(3) Where volume loads vary widely.

(4) For handling corrosive liquids and gases.

(5) Where adjustment to existing conditions must be unusually close.

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for all pressures—liquids, gases, steam
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direct and remote type
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THE FISHER GOVERNOR COMPANY, Inc.

900 Fisher Bldg.
Marshalltown, Iowa

WILDCAT OPERATIONS IN LOUISIANA-ARKANSAS

(Continued from Page 49)

Evansville Inv. Co.'s No. 1 W. B. Welch, 945 ft. E, 511 ft. N, SW cor., Sec. 2-14-8 ..... Began drlg. Jan. 23; cmtd. 12½-in. 151 ft; drlg. 680 ft.

Franklin O. & G. Co.'s No. 1 T. J. O'Brien, 300 ft. N, 300 ft. E, SW cor. NW, Sec. 17-15-9 ..... Cmtd. 15½-in. 208 ft.

MOREHOUSE PARISH

J. P. White's No. 1 Chess-Wymond, Sec. 32-19-6 ..... Tested S.W. 3,025 ft; W.O.

NATCHITOCHES PARISH

S. D. McDaniel's No. 2 Clark & Morse, 800 ft. E, 350 ft. N, C, Sec. 23-5-6 ..... Tested 1,000,000 ft. gas and S.W. 8 ft; S.D. for orders; T.D. 2,536 ft.

Nichols & Wilder's No. 1 Clark, 150 ft. W, 250 ft. N, SE cor., Sec. 10-10-8 ..... S.D. 2,110 ft.

Robeline O. & G. Co.'s No. 1 Winn, 558 ft. N, 348 ft. E, SW cor. SE, Sec. 7-8-9 ..... Top chalk 1,420 ft; drlg. chalk 2,700 ft.

OUACHITA PARISH

J. L. Bullock, trustee's No. 1 West Va. Lbr. Co., N½ NE, Sec. 25-18-5 ..... S.D. on account of high wtr; T.D. 2,700 ft.

RAPIDES PARISH

Ayers Bros.' No. 1 Wickliff, 2,790 ft. N, 150 ft. E, SW cor., Sec. 9-5n-2e ..... S.D. for fuel 2,650 ft.

RED RIVER PARISH

W. D. Ball's No. 1 Krumholtz, 660 ft. S, 660 ft. E, NW cor., Sec. 32-14-10 ..... S.D. account high wtr. 1,550 ft.

Eylers O. & G. Co.'s No. 1 Johnson, 500 ft. N, 500 ft. W, SE cor. SW, Sec. 17-12-19 ..... Tested dry; W.O. 2,667 ft.

LeGrande et als' No. 1 Sample, Sec. 11-14-11 ..... Rigging up.

RICHLAND PARISH

Austin & McDonald's No. 1 Hunt, 594 ft. N, 660 ft. E, SW cor., Sec. 13-17-5 ..... Derrick.

Austin & McDonald's No. 2 Millsaps, SW cor., Sec. 17-17-6 ..... Waiting orders; T.D. 2,679 ft.

Austin & McDonald's No. 3 Millsaps, 1,980 ft. S, 660 ft. E, NW cor., Sec. 16-17-6 ..... Tested S.W; W.O. 2,477 ft.

Austin & McDonald's No. 4 Millsaps, NW cor. Sec. 16-17-6. Location.

Austin & McDonald's No. 5 Millsaps, 2,640 ft. N, 1,320 ft. W, SE cor., Sec. 8-17-6 ..... Derrick.

W. C. Feazel's No. 1 Landrum, 620 ft. N, 4,573 ft. E, SW cor., Sec. 6-16-7 ..... Derrick.

Industrial Gas Co.'s No. 1 T. R. Hodge, 3,259 ft. E, 1,320 ft. S, C, Sec. 7-16-7 ..... Fishing 3-in. drill stem; T.D. 2,874 ft.

Industrial Gas Co.'s No. 1 A. T. Davidson, 1,350 ft. S, 916 ft. E, NW cor., Sec. 6-16-7 ..... S.D; W.O. 2,762 ft.

Industrial Gas Co.'s No. 1 Ruston Drlg. Co., 1,930 ft. S, 1,955 ft. E, NW cor., Sec. 7-16-7 ..... S.D; W.O. 2,636 ft; igneous rock.

Richland O. & G. Co.'s No. 1 Singleterry, 1,930 ft. N, 660 ft. W, SE cor., Sec. 20-18-7 ..... Cmtd. 9-in. csg. 970 ft.

Shreveport Contractors, Inc.'s No. 1 Bule, 600 ft. E, 400 ft. N, SW cor., Sec. 17-15-7 ..... S.D; shale and boulders 2,527 ft.

Triangle Drlg. Co. and Woodley Pet. Co.'s No. 1 G. L. Cumpton, 660 ft. S, 660 ft. W, NE cor. NW SE, Sec. 16-17-7 ..... S.D; junk in hole 2,855 ft.

Woodley Pet. Co.'s No. 1 Bule, 660 ft. N, 1,980 ft. E, SW cor., Sec. 32-18-7 ..... Drlg. red shale 3,210 ft.

SABINE PARISH

Bridges-Clark Oil Co.'s No. 1 Gay et al, 300 ft. S, 300 ft. E, NW cor. NE NW, Sec. 3-9-12 ..... Drlg. 1,590 ft.

Bridges-Clark Oil Co.'s No. 1 McWilliams, 330 ft. S, 330 ft. E, NW cor., Sec. 30-10-11 ..... Rig up.

G. M. LeGrand's No. 1 A. C. Haley, 1,020 ft. N, 3,300 ft. E, NW cor., Sec. 6-7-12 ..... Cmtd. 6⅝-in. csg. 2,136 ft.

D. H. Riddick's No. 1 Scretchfield, 400 ft. E, 400 ft. N, SW cor. NW SE, Sec. 18-9-12 ..... Reaming to bottom; T.D. 2,150 ft.

A. H. Tarver's No. 2 Long Bell, 800 ft. N, 800 ft. W, SE cor. SW, Sec. 18-8-13 ..... Bailed dry; small show gas; S.D. 1,967 ft.

TENSAS PARISH

A. R. Willis et als' No. 1 Curry, 1,320 ft. S, 1,320 ft. E, NW cor., Sec. 39-11-12 ..... Drlg. 600 ft.

UNION PARISH

Bahan & Bahan's No. 1 J. West, 660 ft. N, 660 ft. E, SW cor. SE, Sec. 33-23-3 ..... Cmtd. 12-in. 220 ft; drlg. 800 ft.

Interstate Nat. Gas Co.'s No. 26 fee, 2,970 ft. S, 660 ft. E, NW cor., Sec. 33-23-3 ..... Drlg. 1,350 ft.

Fred Stovall's No. 1 Stovall, 1,820 ft. E, 350 ft. N, SW cor., Sec. 32-23-4 ..... Rig up.

WEBSTER PARISH

F. M. Fuller's No. 1 Monzingo, 200 ft. N, 200 ft. W, SE cor., Sec. 27-18-8 ..... Began drlg. Nov. 10; cmtd. 10-in. at 62 ft.

Paul C. Warren et als' No. 1 Martin, 305 ft. N, 212 ft. E, SW cor., Sec. 20-20-9 ..... S.G. top Nacatoch 1,759 ft; S.D. 1,912 ft.

WEST CARROLL PARISH

H. L. Hunt, Inc.'s No. 1 R. E. Brown, NW cor. NW SW, Sec. 4-21-11 ..... Rig up.

Palmer Corp.'s No. 1-A Marston, 1,320 ft. S, 89 deg., 35 min. W, 1,320 ft. of SE cor., Sec. 11-19-10 ..... Drlg. 2,276 ft.

ARKANSAS

ASHLEY COUNTY

Ark. Fuel Oil Co.'s No. 1 Crossett Lbr. Co., 330 ft. E, 330 ft. S, NW cor., Sec. 1-19-7 ..... Drlg. lime 3,092 ft.

CLEBURN COUNTY

Cosden Oil Co. of Ark.'s No. 1 Donophan, 100 ft. S, 660 ft. E, NW cor. SW SE, Sec. 19-9-10 ..... Drlg. sand and shell 1,265 ft.

Donnelly-Craver et als' No. 1 Doniphan Lbr. Co., SE cor. NW, Sec. 33-11-9 ..... Began drlg. Dec. 30; S.D. 60 ft. account cold weather.

COLUMBIA COUNTY

Parker et als' No. 1 Franks, 330 ft. S, 330 ft. W, C, Sec. 25-19-22 ..... S.D. 2,835 ft.

Williams et als' No. 1 Fullenwider, 200 ft. N, 600 ft. E, SW cor. NE SE, Sec. 12-17-22 ..... Rigging up.

DREW COUNTY

McClintock & Goodka's No. 1 Ogles, 920 ft. W, 400 ft. S, NE cor., Sec. 35-13-5 ..... S.D. repairing rig 1,810 ft.

FAULKNER COUNTY

Gold Creek O. & G. Co.'s No. 2 Stermer, SE cor. NW SE, Sec. 17-4-13 ..... Began drlg. Dec. 12.

GARLAND COUNTY

Givens et als' No. 1 Garrett, 660 ft. S, 660 ft. W, C, Sec. 1-3-19 ..... Drlg. sand 3,394 ft.

GRANT COUNTY

Jones & Watkins' No. 1 Meek, Sec. 5-4-11 ..... S.D. 1,400 ft.

LITTLE RIVER COUNTY

A. L. Buck's No. 1 Greason, NW NW, Sec. 25-12-32 .... Drlg. 2,105 ft.

McDonald & Shaw's No. 1 W. E. Black, 240 ft. N, 450 ft. W, SE cor. SE NE, Sec. 12-13-28 ..... S.D. 1,965 ft.

LOGAN COUNTY

M. W. Greeson's No. 1 C. S. Parke, 330 ft. N, 330 ft. W, SE cor., Sec. 21-8-24 ..... Location.

MADISON COUNTY

Phillips Pet. Co. and F. S. Craver's No. 1, C, Sec. 11-14-28. Tested 250,000 ft. gas 62 ft; drlg. 1,461 ft.

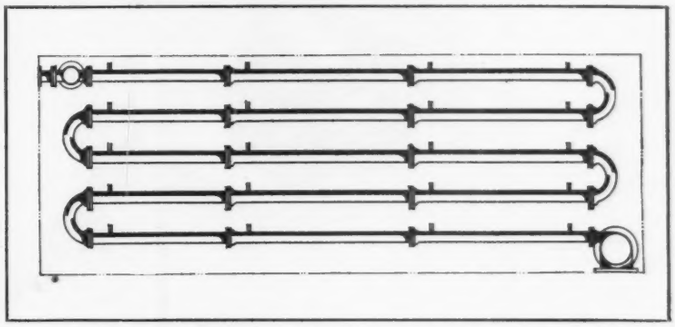
OUACHITA COUNTY

Artex Oil Co.'s No. 1 M. V. Smith, 330 ft. S, 330 ft. E, NW cor. SE NW, Sec. 31-15-17 ..... Cored oil sand 3,075-76 ft; reaming to take core.

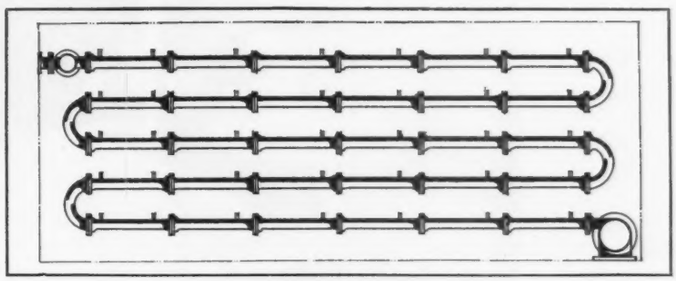
Copenhaven et als' No. 1 Warnick, Sec. 2-15-17 ..... S.D. 2,190 ft.

obviously SUPERIOR *for condenser coil Construction*

IN PLAIN black-and-white we have sketched a typical coil of Simplex Condenser Piping and a typical coil of competitive piping. Boxes compared are 40 feet long (average size). The advantages of Simplex over the competitive piping are self-evident. Inspect the sketches and judge for yourself:



SIMPLEX COIL: Note (1) minimum number of pieces to handle (2) minimum number of supports (3) furnished any length (4) fits any box without waste space



COMPETING COIL: Note (1) 100% more pieces of pipe to handle (2) 75% more joints (3) 75% more supports (4) furnished in only one standard length (5) will not fit any box without cramping or leaving waste space

Let our engineers show you how Simplex Piping will save you money in your condenser coil construction. Write us and our representative will call. No obligation on your part, of course.

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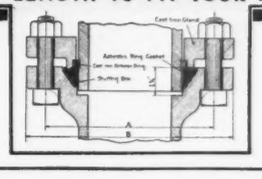

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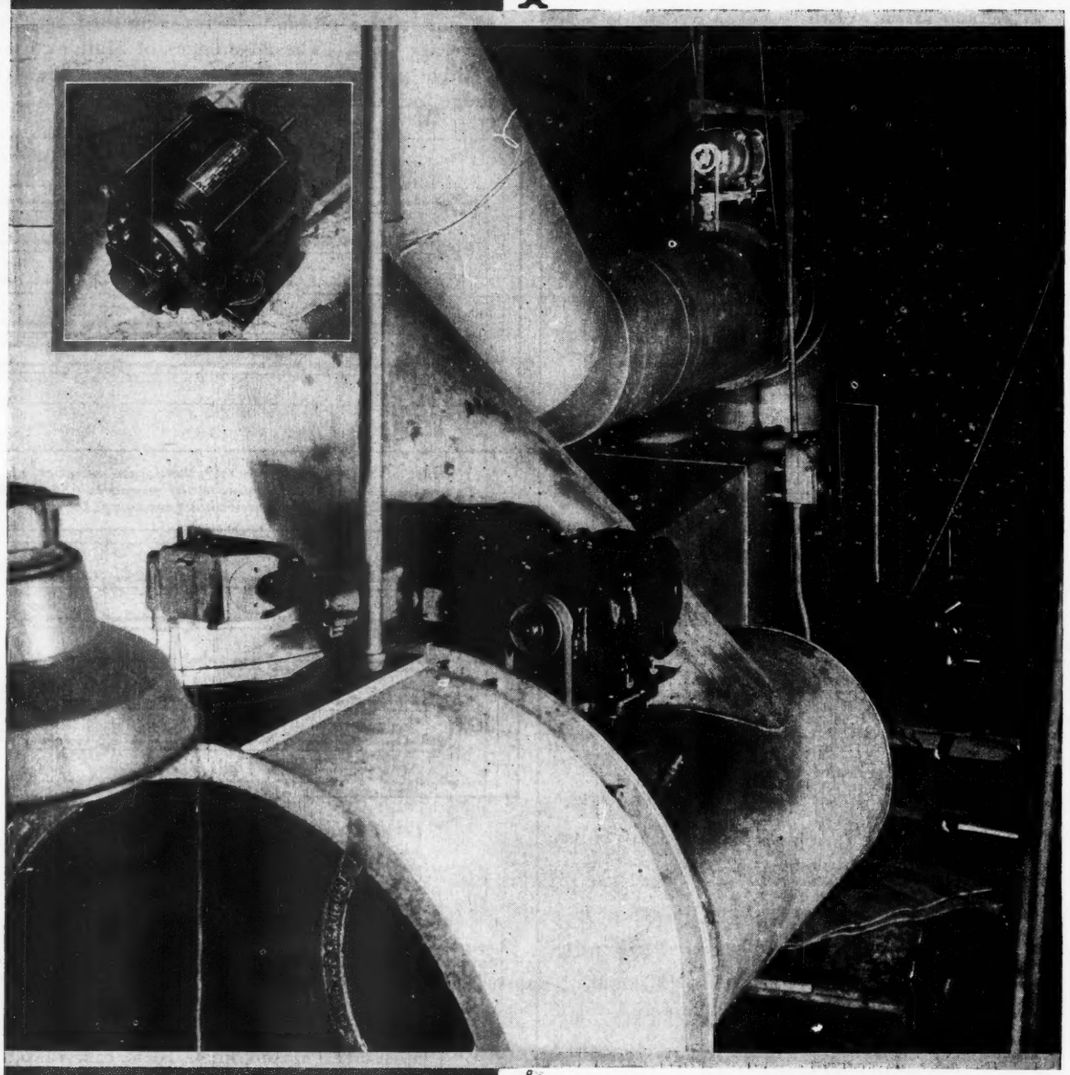

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61-7732-3

Kobler & Erickson's No. 1 Rumph & Tyson, 300 ft. N, 300 ft. W. SE cor., Sec. 13-15-15 ..... Set 10-in. at 98 ft.
C. H. McDonald's No. 1 Fogle, Sec. 13-14-16 ..... S.D. 2,301 ft; W.O.
A. P. Smith et als' No. 1 Reynolds, C SW NW, Sec. 21-14-17 ..... Drlg. 1,480 ft.

PIKE COUNTY

Theo. Davis, trustee's No. 1 Ruth Wilson, 200 ft. S, 200 ft. W, NE cor., Sec. 25-5-26 ..... S.D; funds; T.D. 718 ft.

POPE COUNTY

Ark.-La. Pipe Line Co.'s No. 1 Harms, 622 ft. S, 628 ft. W, NE cor. NE NW, Sec. 22-9-21 ..... Cmtd. 8-in. 300 ft.
Cosden Oil Co.'s No. 1 Mo. Pac. R.R., 660 ft. N, 660 ft. E, SW cor. NW SE, Sec. 13-9-19 ..... Reaming 2,100-65 ft; T.D. 2,500 ft.

PRAIRIE COUNTY

Transcontinental Oil Co.'s No. 1 Louis Novak, 330 ft. E, 330 ft. N, SW cor. SW NE, Sec. 36-2n-6 ..... S.D. 2,435 ft.

ST. FRANCIS COUNTY

Browniee Drlg. Co.'s No. 1 Whitted, 110 ft. N, 110 ft. E, SW cor. SE NW, Sec. 28-4-1 ..... S.D; funds; 300 ft.

UNION COUNTY

Al-Cal Oil Corp.'s No. 1 Harvey, 660 ft. W, 300 ft. S, NE cor. SW SE, Sec. 1-17-16 ..... Reported dry and abd; did not abd; tested S.W. 2,147 ft; coring 2,150 ft
Bredham et als' No. 1 Craig, SW cor. NW NE, Sec. 6-18-15 ..... Drlg. 2,120 ft.
W. M. Coates, trustee's No. 1 McDuffie, Sec. 32-19-17 ..... Coring hard shale 4,448 ft.
S. Y. Dorfman's No. 1 Simmons, 150 ft. N, 150 ft. E, NW SW, Sec. 13-16-15 ..... Tested S.W. 2,061 ft; S.D; W.O. 2,081 ft.
O. W. Estes' No. 1 Felsenthal, 330 ft. S, 330 ft. W, NE cor. NE NW, Sec. 2-18-15 ..... Pulled liner; S.D; W.O. 2,230 ft.
O. W. Estes' No. 1 Telford, 320 ft. S, 320 ft. E, NW cor. SW, Sec. 35-17-14 ..... C.O; 800 ft. oil 2,230 ft; S.D; W.O.
Stark et als' No. 1 Ainsworth, NE cor. NW NE NE, Sec. 8-19-16 ..... S.D. for fuel 2,090 ft.

VAN BUREN COUNTY

Glenn Cole et al, trustee's No. 1 Scanlan, 200 ft. S, 200 ft. W, NE cor. SE NW, Sec. 5-19-13 ..... S.D. 50 ft.

WASHINGTON COUNTY

Delbert & Graves' No. 1 Cunningham, Sec. 14-15-32 ..... S.D. repairing pump; T.D. 550 ft.
O'Hara & Shetterly's No. 1 Boyd, SE cor. SE NE, Sec. 12-16-32 ..... Spudded Sept., 1928; S.D. 140 ft; resumed drlg. Aug. 25; U.R.; T. D. 150 ft.
C. H. Willoughby's No. 1 Jones, Sec. 34-16-30 ..... Trying to kill wtr. flow 2,150 ft; hard sand showing oil 1,637-40 ft.
Lincoln Leaseholding Synd.'s No. 1 Lincoln, Sec. 30-15-32 ..... U.R. 8-in. to T.D. 1,500 ft.

WHITE COUNTY

Letona Synd.'s No. 1 Letona, SE cor. NW SW, Sec. 35-9-8. Cmtd. 5 3-16-in. 3,500 ft; drlg. 3,-605 ft.

EAST TEXAS
CAMP COUNTY

Rogers et als' No. 1 Enfelt, R. M. Montgomery Sur. .... Tested dry 1,870 ft; S.D. 1,920 ft.

RED RIVER COUNTY

D. M. Buffington's No. 1 Hossier, E. Hughhart Sur. .... Drlg. 2,050 ft.
Shad Harper's No. 1 W. R. Garland, J. Wagley Sur. .... S.D. 1,862 ft.
Johnson Pet. Co.'s No. 2 Randolph, Edward Dean Sur. .... S.D. 2,000 ft.

SHELBY COUNTY

Benedum & Trees Oil Co.'s No. 1 McCann, D. G. Green Sur. ..... Cmtd. 15½-in. 396 ft; drlg. 1,-268 ft.
Chapperall Oil Co.'s No. 2 Holt, Matthew Moore Sur. .... S.D. for orders 3,004 ft.

MISSISSIPPI
ALCORN COUNTY

Alcorn Pet. Co.'s No. 1 Matthews, SE cor. Sec. 14-2s-7e.. Arranging to shoot 2,520-60 ft; T. D. 2,735 ft.

CHICKASAW COUNTY

Hightower & Golson's No. 1 Flemming, NE cor. Sec. 20-13-3 ..... Driving 8¼-in. through quicksand; T.D. 1,252 ft.

HINDS COUNTY

Oscar Brown's No. 1 Riverside (formerly Hennessee et als') SE cor. SE SW, Sec. 23-16-5 ..... Set 12½-in. 30 ft; S.D. 1,050 ft.
Love et als' No. 1 Mayes, Sec. 2-5-1e ..... Cmtd. 6⅝-in. 2,460 ft; T.D.
Mrs. Reeder et als' No. 1 State, SE cor. NW NW, Sec. 25-6-1e ..... W.O; T.D. 2,895 ft.

HUMPHREYS COUNTY

E. C. Steele et als' No. 1 C. B. Box, SE cor. SE NE, Sec. 25-14-4w ..... Set 12½-in. 60 ft; S.D.

LAUDERDALE COUNTY

Lauderdale O. & G. Co.'s No. 1 Lackey, 990 ft. S and E, NW cor. NE, Sec. 2-7-16 ..... Set 8¼-in. 2,792 ft; T.D. 2,816 ft; sand 2,809-14 ft.
Meridian O. & G. Co.'s No. 1 Hauser, Sec. 33-8-18 ..... D.S. test; sand 2,640-50 ft; slightly brackish wtr.
J. R. Smith Oil Co.'s No. 1 C. F. Craig, Sec. 2-6-14 ..... Derrick.

LAFAYETTE COUNTY

Banks-Goode et als' No. 1 May, 113½ rods S, 26 rods E, NW cor. SW, Sec. 22-10-1w ..... Derrick.

LINCOLN COUNTY

Lincoln O. & G. Co.'s No. 1 Pat Case, NE NE, Sec. 21-8-6. S.D; W.O. 2,221 ft.

MONROE COUNTY

Amory Dev. Co.'s No. 1 Bourland, Sec. 2-13-19 ..... S.D. 2,912 ft; bailer lost in hole.
Amory Pet. Co.'s No. 1 Hall, Sec. 8-13-19 ..... Set liner 2,323 ft; to stop caving; arranging test; gas show 2,387 ft; T.D. 3,045 ft.
Park Bowser et als' No. 1 Cowart, second hole, Sec. 2-12-19 ..... Driving 12½-in. 30 ft.

WARREN COUNTY

El Dorado Oil Co.'s No. 1 Dornbush, Sec. 8-18-15 ..... Waiting for 6-in. to set; over 2,-350 ft. stuck; D.S.; T.D. 2,-475 ft.

YALOBUSHA COUNTY

Carter Oil Co. and J. D. Collett's No. 1 Blackmur, 330 ft. S, 990 ft. W, C, Sec. 14-11-4 ..... Drlg. Tuscaloosa gravel 2,427 ft.

YAZOO COUNTY

Amerada Pet. Corp.'s No. 1 Doherty, SW SW, Sec. 24-12-2 ..... Drlg. sand 2,932 ft.

TENNESSEE
DECATUR COUNTY

Chester County Oil Co.'s No. 1 Montgomery ..... Cmtd. 6-in. 1,040 ft; drlg. hard gray lime 1,165 ft.

ALABAMA
LAMAR COUNTY

Briggs & Knapp's No. 1 Wefel, Sec. 25-12-14 ..... Drlg. hard lime 1,730 ft.

LAUDERDALE COUNTY

A. D. Morton et als' No. 10 O'Neal estate, Sec. 8-2s-13w.. Rigging up cable tools.

MARION COUNTY

Hobson et als' No. 1 John Clark, SE, Sec. 29-11-14 .... Derrick pattern.

SUMTER COUNTY

B. W. Bates' No. 1 fee, Sec. 3-18-1 ..... U.R. surface csg. at 300 ft; to set 6-in.

WASHINGTON COUNTY

S. A. Hobson's No. 1 Hobson Bros., Sec. 9-8-2 ..... S.D; S.W. flow at 1,450 ft.
S. A. Hobson's No. 1 Wilson, Sec. 27-7-1 ..... Fishing bailer; T.D. 881 ft.

WILDCAT OPERATIONS IN TEXAS PANHANDLE

(Continued from Page 64)

CASTRO COUNTY

Colorado O. & R. Co.'s No. 1 Slemmons, SW cor., Sec. 73, Blk. M-17, B.S.&F. Sur. ..... Rig blown down.
Mystery Oil Co.'s No. 1 J. I. Crum, SE cor. NE, Sec. 333, Blk. M-6, S.K.&K. Sur. ..... S.D. 510 ft. for csg.

CHILDRESS COUNTY

Continental Oil Co. and Sun Oil Co.'s No. 1 Johnson, 660 ft. from NE, Sec. 580, Blk. H, W.&N.W. Sur. .. Spudding.
C. L. Sloane et als' No. 1 B. P. Smith, Sec. 49, F. P. Knott lands ..... S.D. 4,675 ft.

COCHRAN COUNTY

Westbrook et als' No. 1 Slaughter, 400 ft. S and E, Labour 67, League 118, Knox Co. School lands ..... Drlg. 4,200 ft.

DONLEY COUNTY

Blue Bonnett Oil Co.'s No. 1 Ball, 1,075 ft. N line, 935 ft. E line, Sec. 22, Blk. E, D.&P.R.R. Sur. ..... T.D. 3,006 ft; contract depth.
Marine Oil Co.'s No. 1 Sawyer, C SW, Sec. 5, Blk. G, G.C.&S.F. Sur. ..... S.D. 3,200 ft.
Southland Oil Co.'s No. 1 Lewis, C SE 40 ac., Sec. 3, Blk. 29, H.&G.N.R.R. Sur. ..... T.D. 3,005 ft; temp. abd.

GRAY COUNTY

Adams Oil Co.'s No. 4 Morse, 330 ft. S and W, NE cor., Sec. 3, Blk. 26, H.&G.N.R.R. Sur. ..... S.D. 2,495 ft; S.O.
Camel Oil Co.'s No. 2-B Harrah, 330 ft. N and E, Sec. 150, Blk. 3, I.&G.N.R.R. Sur. ..... S.D. 950 ft.
Constantine et als' No. 1 Crews, 330 ft. S and W, NE cor. SW, Sec. 20, Blk. 30, H.&G.N.R.R. Sur. ..... S.G. 2,190 ft; S.D. 2,390 ft.
Danciger et als' No. 11 Jackson, 330 ft. S, 1,320 ft. W, NE cor. NW, Sec. 88, Blk. B-2, H.&G.N. Sur. ..... T.D. 2,906 ft.
Danciger O. & R. Co.'s No. 5 Morse, 330 ft. N and E, SW SW NW, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. .... S.D. 2,505 ft.
Danciger O. & R. Co.'s No. 1 Shaw, 330 ft. S, 286 ft. E of E 39½ ac., NW, Sec. 5, Blk. 1, A.C.H.&B. Sur. .. T.D. 2,588 ft.
Danciger O. & R. Co.'s No. 2 Smith, 330 ft. S and E, SE, Blk. 3, I.&G.N.R.R. Sur. ..... T.D. 3,084 ft; cmt. 8¼-in. csg.
Danciger O. & R. Co.'s No. 1 Williams, 330 ft. N, 330 ft. E, S½ NW ..... Estimated 15,000,000 ft. gas 2,610-70 ft; S.D. 2,720 ft.
Dixon Creek Oil Co.'s No. 1 Harrah, 330 ft. each way from NW cor. SE NE, Sec. 150, Blk. 3, I.&G.N. R.R. Sur. ..... Rig.
Dunlop's No. 4 Morse, 330 ft. N and E, SW cor. SW, Sec. 17, Blk. A-9, H.&G.N.R.R. Sur. ..... T.D. 2,421 ft.
Folle, Pet. Corp.'s No. 1 Hood, 330 ft. S and W of W 80 ac., SW, Sec. 32, Blk. 3, H.&G.N.R.R. Sur. ..... Rig.
Sines & Reiger's (formerly Eslick et als') No. 1 Mrs. J. A. Hopkins, NW cor. W 80 ac. of SW, Sec. 84, Blk. B-2, H.&T.C. Sur. ..... S.D. 3,206 ft.
Gardner Bros. and Collins' No. 2 Saunders, 955 ft. S, 330 ft. E of W 68 ac., E½, J. G. Eustice Sur. ..... Location.
Grallup et als' No. 1 Morse, 330 ft. each way NE cor. SE, Sec. 3, Blk. 26, H.&G.N.R.R. Sur. ..... Rig.
Gulf Prod. Co.'s No. 1 Barrett, 967 ft. N and E, SW cor. NE, Sec. 131, Blk. 3, I.&G.N.R.R. Sur. ..... S.D. 2,550 ft.
Gulf Prod. Co.'s No. 1 Combs, 330 ft. N and W, SE cor., Sec. 38, Blk. 3, I.&G.N.R.R. Sur. ..... Location.
Gulf Prod. Co.'s No. 3 Worley-A, 330 ft. N, 1,650 ft. W, SE SW, Sec. 36, Blk. 3, I.&G.N.R.R. Sur. ..... Temp. abd. at 3,163 ft.
Gulf Prod. Co.'s No. 3 Saunders, 320 ft. S, 990 ft. E, NW cor. its 130-ac. lease out of SW cor., Sec. 40, Blk. 3, I.&G.N.R.R. Sur. ..... S.D. 3,050 ft.
Guernsey Oil Co.'s No. 1 Vaniman, 330 ft. N and W, E½ NE, Sec. 175, Blk. 3, I.&G.N.R.R. Sur. ..... Drlg. 3,200 ft; S.O. 3,157 ft., 3,-165 ft., and 3,195 ft.
Haymer O. & G. Co.'s No. 1 Morse, 330 ft. each way out of SE cor. E½ SE, Sec. 45, Blk. A-9, H.&G. N. Sur. ..... S.D. 2,100 ft.
Herragan Oil Co.'s No. 1 Bradford, 330 ft. N, 990 ft. E, Sec. 123, Blk. B-2 ..... First S.G. 2,475-80 ft; 15,000,000 ft. gas 2,515-40 ft; S.O. 2,932-50 ft; S.D. 3,140 ft.
Humble O. & R. Co.'s No. 1 Combs-Worley, 330 ft. S and W, N½ SE, Sec. 36, Blk. 3, I.&G.N.R.R. Sur. .. Drlg. 300 ft.
Lyon et als' No. 1-A Morse, 330 ft. S and W, NW NW, Sec. 1, Blk. 26, H.&G.N.R.R. Sur. ..... Rig.
Jean Pet. Co.'s No. 1 Furneaux Bros., 330 ft. N and W cor. SE, Sec. 200, Blk. B-2, H.T.N. Sur. ..... Spudded and S.D.
Magnolia Pet. Co.'s No. 4 Harrah, 330 ft. each way, SW cor. NW, Sec. 150, Blk. 3, I.&G.N.R.R. Sur. .... Shut down.
Magnolia Pet. Co.'s No. 1 Cubine, 330 ft. N and W, NE, Sec. 36, Blk. 25, H.&G.N.R.R. Sur. ..... Rig.
Magnolia Pet. Co.'s No. 5 Magnolia, 990 ft. N, 330 ft. E, SW cor., Sec. 14, Blk. 3, I.&G.N.R.R. Sur. ..... Rig on ground.
Magnolia Pet. Co.'s No. 3 Wright, 330 ft. N, 1,480 ft. E, SW cor., Sec. 13, Blk. 3, I.&G.N.R.R. Sur. ..... S.D. 2,655 ft.
McIlroy Oil Co.'s No. 1 Arnold, 330 ft. each way, NW cor. NW, Sec. 139, Blk. 3, I.&G.N.R.R. Sur. ..... Drlg. 2,220 ft.
McMan O. & G. Co.'s No. 7 Palmer, 990 ft. S, 930 ft. W, NE cor. of E 100 ac. of W 200 ac., Sec. 31, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 2,350 ft.
Mid-Continent Pet. Corp.'s No. 1 Laugham, 330 ft. S and W, W 231 ½ac. of N 310½ ac., Sec. 1, Blk. B-2, H.&G.N. Sur. ..... Location.
Operators Royalty Co.'s No. 1 Eddington, 330 ft. each way, NE cor. NW, Sec. 34, Blk. B-2, H.&G.N.R. R. Sur. ..... Rig.
Oil Operators' No. 1 Bowers, 330 ft. N, 330 ft. E, Sec. 93, Blk. B-2, H.&G.N. Sur. ..... Show oil and gas 2,400-17 ft; S.O. 3,036-55 ft; first gas 2,483 ft; increase at 2,500 ft., 2,544 ft., and 2,950 ft; S.D. 3,090 ft.
Operators Oil Co.'s No. 5 Cook-Faulkner, 990 ft. N, 330 ft. W, SE, W 90 ac., Sec. 30, Blk. B-2, H.&G.N. Sur. S.D. 884 ft; spraying 5 bbls. oil per hr; T.P. 2,860 ft; S.D. 2,-900 ft.
Phillips Pet. Co.'s No. 6 Jackson, 330 ft. N, 990 ft. E line, S½ NE, Sec. 88, Blk. B-2, H.&G.N.R.R. Sur. .. T.D. 3,030 ft.
Queen Oil Co.'s No. 1 Lovett, 330 ft. N and W, W½ NE, Sec. 35, Blk. B-2, H.&G.N.R.R. Sur. ..... T.D. 2,834 ft.
Ray et als' No. 1 Noble, 240 ft. S, 330 ft. W line, W 80 ac., SW, Sec. 10, Blk. A-6, H.&G.N. Sur. ..... S.G. 2,708 ft; S.D. 2,912 ft.
Rieger & Steckoli's No. 1 Bohr, 330 ft. S and E, Sec. 37, Blk. B-3, H.&G.N. Sur. ..... Drlg. 2,760 ft.
Robertson & Devore's No. 1 Saunders, 330 ft. S and W, E½ NW, Sec. 40, Blk. 3, H.&G.N.R.R. Sur. ..... Drlg. 2,710 ft.
Shamrock O. & G. Co.'s No. 3 Saunders, 330 ft. N and E, SW E½ SE, Sec. 4, Blk. 1, A.C.H.&B. Sur. ..... 12,000,000 ft. gas 2,458-2,585 ft; spraying oil 2,550-85 ft; T.D. 2,-587 ft; averaging 80 bbls. daily.
Shamrock O. & G. Co.'s No. 1 Taylor, 330 ft. each way out of NE cor. NW, Sec. 1, Blk. 2, H.&G.N. Sur. .... S.G. 2,245-85 ft; 1,000,000 ft. gas 2,805-10 ft; drlg. 3,110 ft.
Smith & McDaniel's No. 1 Noble, 330 ft. N, 943 ft. E, SW NE, Sec. 49, Blk. A-9, H.&G.N.R.R. Sur. ..... Drlg. 2,137 ft.
St. Clair Oil Co.'s No. 1 Dial, 330 ft. S and W, NE cor. SE, Sec. 10, Blk. 25, H.&G.N.R.R. Sur. ..... Spudded and S.D.
St. Clair Oil Co.'s No. 1 L. S. Stockton, SE cor., Sec. 35, W. R. Lee Sur. ..... Spudded and S.D.
Stover and Shell's No. 1 Saunders, 990 ft. N, 330 ft. E, of N 100 ac. of W 149 ac., Sec. 3, B.&B. Sur. ..... 4,000,000 ft. gas 2,258-2,370 ft; T. D. 2,518 ft.
Southern Explin. Co.'s No. 1 Noel, 330 ft. S and W, W½ NW, Sec. 138, Blk. 3, I.&G.N.R.R. Sur. ..... Driving 12½-in. csg. at 650 ft.
The Texas Co.'s No. 1 Bell, 2,310 ft. N, 2,640 ft. W, Sec. 133, Blk. B-2, H.&G.N.R.R. Sur. ..... Drlg. 1,206 ft.
The Texas Co.'s No. 8 Cook-Faulkner, 1,158 ft. N, 1,835 ft. W, SE cor., Sec. 29, Blk. B-2, H.&G.N.R.R. Sur.. Sprayed 300 bbls. first 24 hrs; T.P. 2,675-78 ft. and 2,740 ft; flowing 345 bbls. per day; drlg. 2,835 ft.

The Texas Co.'s No. 6 Combs-Worley, 330 ft. S and E, NW cor. S½ SE, Sec. 36, Blk. 3, I.&G.N.R.R. Sur. — Cmtd. 8⅛-in. csg. 2,083 ft.
The Texas Co.'s No. 15 Saunders, 330 ft. N and W, SE cor. W½ SE, Sec. 4, Blk. 1, A.C.H.&B. Sur. — S.D. 2,610 ft.
Travis & Rieger's No. 1 Mackie, 330 ft. N and E, Sec. 114, Blk. B-2, H.&G.N.R.R. Sur. — 16,000,000 ft. gas; T.P. 2,685 ft; rig burned 3,343 ft.
Travis et als' No. 1-B Webb, 330 ft. N and W, Sec. 61, Blk. 25, H.&G.N.R.R. Sur. — T.D. 2,614 ft; T.P. 2,610 ft; 300 ft. oil in hole.
Trippiehorn Oil Co.'s No. 1 Morse, 330 ft. S and W, SW SE, Sec. 17, Blk. A-9, H.&G.N.R.R. Sur. — S.D. 1,950 ft.
Vulcan O. & G. Co.'s No. 1 Carpenter, 330 ft. N and W of W 80 ac., NW, Sec. 25, Blk. 25, H.&G.N.R.R. Sur. — Drlg. 630 ft.
Wright Wilson, trustee's No. 1 Chapman, 175 ft. S and E lines, N½ NW, Sec. 69, Blk. 25, H.&G.N. Sur. — S.O. 2,685 ft; S.D. 2,693 ft.
Wilcox-Pampa Oil Co.'s No. 10 Combs-Worley, 330 ft. S and W, NE cor. SW SW, Sec. 35, Blk. 3, I.&G. N.R.R. Sur. — S.D. 2,820 ft; 32,000,000 ft. gas and 90 bbls. oil first 7 hrs; T.P. 2,811-13 ft.

HARTLEY COUNTY

Dana O. & G. Co.'s No. 1 Fritz, C NE, Sec. 81, Blk. 44, H.&T.C.R.R. Sur. — Fishing 2,572 ft.

HOCKLEY COUNTY

World Oil Co.'s No. 1 Ellwood, 320 ft. N and W lines, League 7, Wilbarger County School lands; elevation 3,363 ft; contract depth 5,000 ft. — Drlg. 4,755 ft.

HUTCHINSON COUNTY

Alamosa Oil Co.'s No. 4 Sanford, 310 ft. S, 320 ft. W, NE cor. N 160 ac., S 240 ac., Sec. 85, Blk. 46, H.& T.C. Sur. — S.O. and wtr. 3,010-11 ft; S.D. 3,-095 ft.
Alexander et als' No. 1 Johnson, 1,709 ft. E, 330 ft. N of N 80 ac. of E½ E. T. Tomlinson Sur. — Location.
Barnsdall Oil Co.'s No. 4 Prichard "A," C SW NW, Sec. 3, Blk. 4, D.&S.E. Sur. — Drlg. 620 ft.
Danciger O. & R. Co.'s No. 1 Cheatham, 330 ft. N and E SW SE, Sec. 38, Blk. Y, A.&B. Sur. — Location.
Danciger O. & R. Co.'s No. 3 Moore, 330 ft. S and E, NW W½ SE, Sec. 125, Blk. 4, I.&G.N.R.R. Sur. — 1,000 ft. oil in hole; T.P. 3,003-20 ft; S.D. 3,020 ft.
Danciger O. & G. Co.'s No. 4 Moore, 330 ft. N and E, SW cor. W½ SE, Sec. 125, Blk. 4, I.&G.N.R.R. Sur. — Drlg. 2,376 ft.
Dixon Creek Oil Co.'s No. 1 Cheatham, 990 ft. E, 330 ft. S, N½ SE, Sec. 38, Blk. Y — Location.
Dixon Creek Oil Co.'s No. 1 Johnson Bros., 50 ft. S, 330 ft. W, NE cor. E 80 ac., J. Gammon Sur. — Spudding.
Gulf Prod. Co.'s No. 1 W. E. Herring, 1,320 ft. N, 1,-395 ft. E, SW cor., Sec. 5, Blk. J, H.&G.N. Sur. — Location.
Gulf Prod. Co.'s No. 1 Herring-A, 990 ft. S, 990 ft. W, NE cor., George Bazon Sur. — Location.
Huey et als' No. 3 Smith et al, 330 ft. N, 660 ft. W, S 40 ac., of E 100 ac., SE, Sec. 12, Blk. Y — S.D. 2,702 ft.
Midwest Explin. Co.'s No. 1-B Pitcher, 330 ft. E and S line, W½ SW, Sec. 19, T.C.R.R. Sur. — Rig.
Phillips Pet. Co.'s No. 1 Johnson-Mayer, 990 ft. N and 990 ft. W line, NE, Sec. 37, Blk. Y, A.&B. Sur. — Spudding.
Phillips Pet. Co.'s No. 1 Johnson-Rudy, 330 ft. W, 330 ft. S, SW SW, Sec. 30, Blk. Y, A.&B. Sur. — Building rig.
Reliance O. & G. Co.'s No. 2 Sanford, 330 ft. S and E, NW W½ of N 80 ac. of S 320 ac., Sec. 83, Blk. 46, H.&T.C. Sur. — S.D. 2,810 ft.
Smith & McDaniel's No. 1 Pitcher, 330 ft. S and E, W, SE, Sec. 19, Blk. M-21, T.C.R.R. Sur. — T.D. 3,177 ft; T.P. 3,120-73 ft; I. P. 115 bbls.
Skelly Oil Co.'s No. 1 Byrd, 2,640 ft. E line, 3,960 ft. S line of W 3,094 ac., D. Luce Sur. — Drlg. 675 ft.
The Texas Co.'s No. 4 J. L. Moore, 330 ft. S and W, NE cor. SW, Sec. 125, Blk. 4, I.&G.N.R.R. Sur. — T.P. 3,035-38 ft; swbd. 105 bbls; T.D. 3,095 ft; increase at 3,073-83 ft; I.P. 105 bbls.
Texarado Oil Co.'s No. 2 Sanford, 330 ft. S, 990 ft. W, NE cor. N 80 ac., of S 160 ac., Sec. 83, Blk. 46, H. &T.C.R.R. Sur. — Shut down.

LAMB COUNTY

Graham O. & G. Co. et als' No. 1 Ellwood, CWL, Sec. 9, Blk. T, T. A. Thompson Sur. — S.D. 4,128 ft.

LIPSCOMB COUNTY

Brown et als' No. 1 Box T Ranch, SW NE, Sec. 612, H.&T.C. Sur. — S.D. 3,750 ft.
Okla. Public Service Co.'s No. 1 C. W. Jones, NE SW, Sec. 100, H.&T.C. Sur. — Fishing 4,974 ft.

LUBBOCK COUNTY

Center Oil Co.'s No. 1 Bowles Ranch — Small S.O. 1,133-40 ft; S.D. 4,-167 ft.

MOORE COUNTY

Canadian River Gas Co.'s No. 1-C Sneed, 660 ft. N and E, SW, Sec. 46, Blk. 6-T, T.&N.O.R.R. Sur. — S.D. 1,770 ft.
Fritch O. & G. Co.'s No. 1 Lee Bivins, C N 40 ac. of N 160 ac., Sec. 4, Geo. Mahan Sur. — 2,000,000 ft. gas 1,550-65 ft; S.D. 3,090 ft; 6,000,000 ft. gas.
Gulf Prod. Co.'s No. 1 Kilgore, C SW, Sec. 22, Blk. P.Mc., E.L.R.R. Sur. — Location.
Operators Royalty Co. et als' No. 1 Jones, 330 ft. S line, 330 ft. E line, SW SW, Sec. 164, Blk. 3-T, T.&N.O.R.R. Sur. — Drlg. 1,972 ft.
Red River Gas Co.'s No. 1 J. M. Shelton, 330 ft. each way from SE cor., Sec. 52, Blk. 3, G.&M. Sur. — S.D. 2,400 ft.

MOTLEY COUNTY

Explin. Co.'s No. 6 Matador, 330 ft. N line, 330 ft. E line, Sec. 132, Blk. M — S.D. 4,011 ft.
Matador Oil Corp.'s No. 1 Owens, C NE, Sec. 10, Blk. G, B.&B. Sur. — S.D. 580 ft.

RANDALL COUNTY

W. A. Patterson's No. 1 Palo Duro, Sec. 60, Blk. K-14 — S.D. 1,250 ft.

ROBERTS COUNTY

Big Bend Oil Co.'s No. 1 Ledrick, Sec. 7, Blk. A-5 — T.D. 5,992 ft; shot 10 qts. 5,270-93 ft; S.O. 5,288 ft; C.O.

WHEELER COUNTY

Burnett & Hosher's No. 1 Hosher, 330 ft. N and W, SW SE, Sec. 63, Blk. 17, H.&G.N.R.R. Sur. — S.D. 1,410 ft.
Dunaway Bros.' No. 1 Worley, 330 ft. S and W, NE cor. NW, Sec. 39, Blk. 24, H.&G.N.R.R. Sur. — S.D. 815 ft.
Edwards et als' No. 1 Cates, C NW NE, Sec. 73, Blk. 23, H.&G.N. Sur. — S.D. 175 ft.
Lela O. & G. Co.'s No. 1 Williams & Laycock, 330 ft. S, 209 ft. W, W½ NW, Sec. 20, Blk. A-8, H.&G.N. Sur. — S.D. 2,053 ft; 5,000,000 ft. gas 1,-932-2,025 ft.
Lone Star Gas Co.'s No. 1 Ridinger, C NW NW, Sec. 65, Blk. 17, H.&G.N. Sur. — Rig on ground.
Martin & Debous' No. 3 Close, C NW NE, Sec. 83, Blk. 23, H.&G.N.R.R. Sur. — Fishing bailer; T.D. 1,240 ft.
Murchison & Fain's No. 1-A Cooper, 330 ft. W, 330 ft. S, NW, Sec. 80, Blk. 23, H.&G.N.R.R. Sur. — Location.
Upham Gas Co.'s No. 5 Close-Gooch, 30 ft. N, 660 ft. E, SW cor. SW NW, Sec. 81, Blk. 23, H.&G.N.R. R. Sur. — Location.
Upham Gas Co.'s No. 1 Tinley, C NE NE, Sec. 66, Blk. 17, H.&G.N.R.R. Sur. — T.D. 1,904 ft; 5,000,00 ft. gas 1,-895 ft.
Wischkamper et als' No. 2 Brown, C SE NE, Sec. 53, Blk. 23, H.&G.N.R.R. Sur. — Location.
Wischkamper et als' No. 2 Curry, C NW SE, Sec. 53, Blk. 23, H.&G.N. Sur. — Drlg. 1,350 ft.

WILDCAT OPERATIONS IN WEST TEXAS

(Continued from Page 63)

Duffey et al's No. 7 Cowden Bros., 1,320 ft. from S and 1,420 ft. from E of Sec. 18, Blk. X, C.C.S.D.&R.G. N.G.R.R. Sur — Shut down 2,000 ft.
Humble Oil & Ref. Co.'s No. 1-E University, 2,310 ft. from N and 930 ft. from E, Sec. 40, Blk. 30, University Land — Top salt 1,020 ft.; shut down 2,825 ft.
Simms and Atlantic's No. 1 University, 2,310 ft. from N, 990 ft. E, Sec. 39, Blk. 30, University Land — Fishing 1,740 ft.; top salt 1,070 ft.
Warner-Quinlan Co.'s No. 8 University, 990 ft. S and 330 ft. W of NE cor. of SW, Sec. 39, Blk. 30, University Land — Location.

CROCKETT COUNTY

Empire Gas & Fuel Co.'s No. 1 Shannon, 330 ft. from N and E of Sec. 42, T.C.R.R. Sur. — Top salt 1,130 ft.; top lime 2,468 ft.; top pay 2,615 ft.; total depth 2,660 ft.; 1 bbl. oil per hour; shot 50 qts. from 2,615-30 ft.; bailing 25 bbls. oil and 8 bbls. water per day.
Lewis & Daniels' No. 1 Pecos River bed, 19 yds. S and 37° E of NW cor., Sec. 33, Blk. 1, I.&G.N. Sur. — Shut down 1,400 ft.
Magnolia Pet. Co.'s No. 1 Hoover, 2,310 ft. from N and 330 ft. from E of Sec. 12, Blk. 1, G.C.&S.F.R.R. Sur. — Drlg. 442 ft.

CULBERSON COUNTY

Grisham & Hunter Oil Corp.'s No. 1 fee, 330 ft. from S and W of Sec. 14, Blk. 59, T.&P. Sur. — Oil show 1,437 ft.; hole full salt water 2,612 ft.; shut down 3,513 ft.
Grisham & Hunter Oil Corp.'s No. 1 Seay, 330 ft. from S and W of Sec. 16, Blk. 59, Twp. 7, T.&P.R.R. Sur. — Hole full sulphur water 2,590 ft.; drlg. 2,081 ft.
Hickey & Stiver's No. 1 C. O. Finley, 600 ft. N and 1,980 ft. W, Sec. 20, Blk. 82 — Small show oil 1,331 ft.; shut down 2,275 ft.; hole full water; elev. 3,874 ft.
West Coast Oil & Exploration Co.'s No. 1 McGregor, C NW, Sec. 14, Blk. 81 — Slight show oil 740 ft.; shut down 875 ft.
Scott & Dittman's No. 1 Miller, 1,160 ft. N and 2,480 ft. E, Sec. 1, Blk. 97, Public School Land — Rainbow 1,056 ft.; 300 ft. sulphur water 1,725 ft.; oil show 2,528 ft.; hole full sulphur water; running 6-in. casing; shut down 3,508 ft.

ECTOR COUNTY

Anderson's No. 1 fee, 1,320 ft. E along N line, Sec. 19 and 150 ft. N at right angles with line, Sec. 18, Blk. B-16, Public School Land — Moving in material.
Cosden Oil Co.'s No. 1-A University, 2,310 ft. from N. 440 ft. from E of Sec. 1, Blk. 35 — Rerunning 6⅝-in. casing total depth 3,290 ft.
Cosden Oil Co.'s No. 1 University-B, 1,650 ft. S and 440 ft. W of NE cor. Sec. 2, Blk. 35 — Top lime 1,095 ft.; est. 100,000 ft. gas at 3,335 ft.; flowed 975 bbls. 24 hrs.; total depth 3,636 ft.
C. P. Davis et al's No. 1 Hendricks, C SW Sec. 46, Blk. 42, Twp. 2s, T.&P.R.R. Sur. — Rig.
Humble Oil & Ref. Co.'s No. 2 Kloh-Rumsey-D, 2,310 ft. S and 440 ft. E of NW cor. of Sec. 7, Blk. 44, Twp. 3s, T.&P. Sur. — Building rig.
Humble Oil & Ref. Co.'s No. 2 York, 990 ft. S and 440 ft. E of NW cor. of Sec. 16, Blk. 44, Twp. 3s, T.&P. Sur. — Location.
Humble Oil & Ref. Co.'s No. 3 York, 1,650 ft. S and 440 ft. E of NW cor. Sec. 16, Blk. 44, Twp. 3s, T.&P. Sur. — Location.
E. A. Ibbetson et al's No. 1 Wurtz, 330 ft. from N and E line of NW Sec. 16, Blk. 46, Twp. 3s, G.M.M.B.&S. Sur. — Location.
Landreth Prod. Corp.'s No. 1-T University, 990 ft. N, 440 ft. E, Sec. 3, Blk. 35, University Land — Estimated 18,000,000 ft. gas at 3,135-38 ft.; if rock pressure is sufficient it will be completed as gas well; will skid rig 110 ft. east.
Llano Oil Co.'s No. 1 Midland, 330 ft. N and W of Sec. 18, Blk. 44, Twp. 3s, T.&P.R.R. Sur. — Drlg. 1,675 ft.
R. R. Penn et al's No. 1 Goodman et al, 2,640 ft. N and 330 ft. W of SE cor. Sec. 27, Blk. 44, T.&P.R.R. Sur. — Location.

EL PASO COUNTY

Laytex's No. 1 Malone, 2,200 ft. SW and NW, Sec. 46, J. M. Day Sur. — Shut down 1,481 ft.

EDWARDS COUNTY

A. M. Griffith's No. 1 Wardlow, Sec. 60, V-8, J. C. Clift Sur. — Shut down 3,000 ft.

FISHER COUNTY

Cranfill & Reynolds' No. 1 Johnson, 440 ft. from N and 1,540 ft. from W of Sec. 3, Blk. R, Richardson Sur. — Spudding.
Magnolia Pet. Co.'s No. 1 Lee, Sec. 357, 2,310 ft. from N and 4,286 ft. from W — Shut down 4,500 ft.
Mid-Kansas' No. 1 Stephens, Sec. 26, 1,800 ft. from N, 330 ft. E, El Paso County School Land — Shut down 4,005 ft.

GAINES COUNTY

Louisiana Oil & Ref. Co.'s No. 1 Ralph, 1,320 ft. from S and W of Sec. 7, Blk. A-28, Public School Land — Drlg. 3,920 ft., anhydrite and lime.

GARZA COUNTY

Pandem Oil Corp.'s No. 1 Justice, 330 ft. from S and W of Sec. 12, Blk. 6, H.&G.N. Sur. — Location.
Pandem Oil Corp.'s No. 1 Stokes, 2,310 ft. N and E of SW, Sec. 32, Blk. 5, G.H.&H.R.R. Sur. — Total depth 3,018 ft.; show oil 2,908-18 ft.; plugged back to 2,938 ft.; cleaning out and plugging back to shut off water after 90-qt. shot from 2,908-28 ft.; cleaning out.

GLASSCOCK COUNTY

California Co.'s No. 3 Curle, 990 ft. S and 2,310 ft. W of NE cor., Sec. 219, Blk. 29, W.&N.W.R.R. Sur. — Showing oil from 3,022-31 ft.; total depth 3,671 ft.; plugged back to 2,536 ft.
California Co.'s No. 1 Jones, 330 ft. S from N and E lines, Sec. 25, Blk. 33, Twp. 2s, T.&P. Sur. — Derrick.
Timberlake & Snyder's No. 1 Meek, 2,310 ft. W and 1,600 ft. N of SE cor., Sec. 7, Blk. 34, Twp. 3s, T.&P. Sur. — Show oil 970 ft.; shut down 1,350 ft.
F. H. E. Oil Co.'s No. 1 Cox, 330 ft. from S and E of SW Sec. 8, Blk. 33, Twp. 2s, T.&P. Sur. — Location.
Kirby Pet. Co.'s No. 3 Baker, Sec. 23, Blk. 33, Twp. 2s, 1,650 ft. from N, 330 ft. W — Top pay 2,164 ft.; total depth 2,173 ft.; 1,800 ft. oil in hole.
Simms Oil Co.'s No. 2 Coffee, Sec. 22, Blk. 33, Twp. 2s, 1,650 ft. from N, 330 ft. E — Drlg. plug 2,050 ft.
Simms Oil Co.'s No. 3 Coffee, 990 ft. from N and 330 ft. from W of E half Sec. 22, Blk. 33, Twp. 2s — Shut down 215 ft.
World Oil Co.'s No. 2-C McDowell, Sec. 21, Blk. 34, Twp. 2s, 330 ft. S and 2,310 ft. E of NW cor. — Hole full water 840-75 ft.; show oil 2,341 ft. and 2,441 ft.; oil rose 350 ft. in hole in 1 hr.; shut down 2,441 ft. for orders.

HOWARD COUNTY

American Maracaibo Co.'s No. 4-A Settle, 1,040 ft. S and 330 ft. E of NW cor. Sec. 6, Blk. 32, Twp. 2s, T.&P.S. Sur. — Shut down 208 ft.

California Co.'s No. 11 Roberts, Lease 2, 990 ft. N and 2,188 ft. W of SE cor. Sec. 137, Blk. 29, W.&N.W. R.R. Sur. ..... Drlg. 1,320 ft.
Cosden Oil Co.'s No. 6 Roberts-A, 200 ft. N and E of SW cor. Sec. 129, Blk. 29, W.&N.W.R.R. Sur. ..... Shut down 1,456 ft.; sulphur water 1,433-46 ft.
Empire Gas & Fuel Co.'s No. 4 Clay, 330 ft. N and 2,310 ft. W of SE cor. Sec. 127, Blk. 29, W.&N.W.R.R. Sur. ..... Fishing 1,455 ft.
Group No. 1 and Continental Oil Co.'s No. 2 Overton, 1,650 ft. from N and 2,310 ft. from E line of Sec. 5, Blk. 32, Twp. 2s, T.&P.R.R. Sur. ..... Shut down 2,140 ft.
Group No. 1 and Continental Oil Co.'s No. 3 Overton, 990 ft. from N and 330 ft. from E line of Sec. 5, Blk. 32, Twp. 2s, T.&P.R.R. Sur. ..... Shut down 2,055 ft.
McGinley-Sigler's No. 1 Hyman-B, 330 ft. S and W of NE cor. SW Sec. 89, Blk. 29, W.&N.W. Sur. ..... Drlg. 490 ft.
McGinley-Sigler's No. 1 Hyman-C, 330 ft. N and 990 ft. W SE cor. SE Sec. 93, Blk 29, W.&N.W.R.R. Sur. .... Location.
Merriwether's No. 1 Smith, 150 ft. from S, 2,490 ft. from W, Sec. 45, Blk. 33 ..... Drlg. 1,880 ft.
Moody Oil Corp.'s No. 23-B Roberts, 990 ft. from N and W of Sec. 137, Blk. 29 ..... Set 10-in. casing; shut down 261 ft.
Plymouth Oil Co.'s No. 4 Abrams, 330 ft. from N and 1,650 ft. from W, Sec. 5, Blk. 32, Twp. 2s ..... Top pay 2,480 ft.; total depth 2,519 ft.; plugged back 2,505 ft.; pumped 20 bbls., 15 per cent water, in 24 hrs.; may shoot.
Pure Oil Co.'s No. 3 Hooks, 2,440 ft. S. 1,036 ft. W. Sec. 140, Blk. 29, W.&N.W.R.R. Sur. ..... Total depth 1,890 ft.; 100 ft. oil in hole.
Schermerhorn Oil Co.'s No. 2 Kloh et al, 990 ft. from S and W of Sec. 13, Blk. 33, Twp. 2s, T.&P. Sur. .... Drlg. 2,460 ft.
Simms Oil Co.'s No. 2 Clay, 330 ft. from S, 2,310 ft. from W, Sec. 127, Blk. 29 ..... Oil show 1,570-80 ft.; drlg. 2,230 ft.
Ward Oil Co.'s No. 21 Roberts, 2,310 ft. N and 990 ft. E of SW cor. of Sec. 137, Blk. 29, W.&N.W.R.R. Sur..... Drlg. 2,410 ft.

HUDSPETH COUNTY

California Co.'s No. 1 University, 3,821 ft. N and 2,554 ft. E of SW cor., Sec. 19, Blk. E ..... Drlg. 3,419 ft.
Western States Oil Co.'s No. 1 Moore, C SE, Sec. 16, Blk. 71, Twp. 6, T.&P. Sur. ..... Shut down 2,760 ft.
Western States Oil Co.'s No. 1 Gardner & Moseley, NE NW, Sec. 12, Blk. 18 ..... Drlg. by tools 3,135 ft.

IRION COUNTY

Beesley's No. 1 Sawyer Cattle Co., 1,320 ft. N and E of SW cor., Sec. 3,032, Blk. 24, H.&T.C.R.R. Sur. ..... Hole full salt water 1,175 ft.; cleaning out 1,365 ft.
Crawford Oil Co.'s No. 1 Williams, 450 ft. from N, 150 ft. from W, Subd. 8 ..... Shut down 1,105 ft.
Cromwell et al's No. 1 Fuller, 2,134 ft. N and 631 ft. W of SE cor., Sec. 81, Blk. 1, H.&T.C.R.R. Sur. ..... Shut down 870 ft.
Kingwood Oil Co. et al's No. 1 J. D. Suggs, SE NW SE, Sec. 19, Blk. 7, H.&T.C. Sur. ..... Show gas 7,656 ft.; set 4½-in. casing 7,550 ft.; encountered 2,400 ft. sulphur water at 7,818 ft.; testing 7,670 ft.; plugged back with lead wool to 7,718 ft.; plugged back with cement to 7,668 ft.; shot 80 qts.; bridged over 800 ft. to 7,145 ft.; cleaning out.
J. A. Starkweather's No. 1 Lindley, Sec. 1,160½, 900 ft. from S, 150 ft. from E, H.&T.C. Sur. on B ..... Shut down 1,475 ft.; drlg. 1,610 ft.
P. H. Williams' No. 1 Ash, C of Sec. 20, Washington County ..... Shut down 7,174 ft.

JONES COUNTY

Continental Oil Co.'s No. 1 Phillips, 440 ft. from S and 330 ft. from E of Phillips 80-ac. tract, Sec. 16, Blk. 19, T.&P. Sur. ..... Shut down 2,487 ft.
Cosden-Herbert et al's No. 3 Bickley, 330 ft. N and W of SE cor. of S half NW, Sec. 50, Blk. 18 ..... Rig.
Cranfill & Reynolds' No. 1 Stevens, 990 ft. from N and 3,630 ft. from W of John McMullen Sur. 337 ..... Shut down 2,795 ft.
Mid-Tex Oil & Gas Co.'s No. 1 King ..... Shut down 1,590 ft.
Shabeen et al's No. 1 King ..... 800 ft. fluid in hole; shut down 2,204 ft.; top pay 2,061 ft.; cleaning out after shot.
W. S. Ware's No. 2 Newman, 150 ft. from N and 2,090 ft. from E of Sec. 52, Blk. 18, T.&P.R.R. Sur. ..... Fishing 2,330 ft.

KENT COUNTY

California and Atlantic's No. 1 Wallace, 330 ft. from S and W, Sec. 60, Blk. G, W.&N.W.R.R. Sur. ..... Drlg. 2,225 ft.
White & Smith's No. 1 Pursley estate, 1,320 ft. from E and 2,640 ft. from S of Sec. 8, Blk. H, H.&T.B. Sur... Shut down 273 ft.

KIMBLE COUNTY

C. L. Bryant et al's No. 1 Lambert, 700 ft. from N and W line of F. Lotta Sur. ..... Shut down 800 ft.
McLean & Jamison's No. 1 Cannon, 1,940 ft. N and 360 ft. W of SE cor. Robert Cochran Sur. ..... Shut down 1,500 ft.

LOVING COUNTY

Humble Oil & Ref. Co.'s No. 1 Kloh, 2,640 ft. N and W. Sec. 35, Blk. 55, Twp. 2, T.&P.R.R. Sur. ..... Total depth 3,650 ft.; plugged back to 3,360 ft.
Lockhart & Co.'s No. 2 fee, 676 ft. S. 330 ft. W, Sec. 91, Blk. 1, W.&N.W. Sur. ..... Spudded 140 ft.; shut down.
Lockhart & Co.'s No. 3 Hubbard, 1,650 ft. from NE line, 330 ft. NW line of Sec. 83, Blk. 33, H.&T.C.R.R. Sur. Location.
Lockhart & Co.'s No. 5 Hubbard, 1,650 ft. SW of NE line and 330 ft. SE of NW line Sec. 83, Blk. 33, H.&T.C. ..... Drlg. 1,400 ft.

LYNN COUNTY

Lubewell Oil Co.'s No. 1 May, 2,310 ft. S, 2,310 ft. W, Sec. 10, Blk. 7, E.L.R.R. Sur. ..... Shut down 190 ft. for casing.
George McCamey's No. 1 Edwards, 165 ft. N and E, Sec. 5, Blk. 2, L.S.&W. Sur. ..... Top salt 2,140 ft.; oil show 1,580-90 ft.; hole full sulphur water 4,730 ft.; set 6-in. casing 4,733 ft.; shut down 5,040 ft.

MENARD COUNTY

Cromwell & Duffey's No. 2 Winslow, 250 ft. S and E of NW cor. NE of NE, Sec. 36, J. H. Gibson Sur. ..... Spudded and shut down.
I. C. Barnett's No. 2 Callan, Sec. 1, 1,050 ft. from S, 1,190 ft. W ..... 2½ bbls. water hourly, 1,100,000 ft. gas, 1,268 ft.

MITCHELL COUNTY

Gibson & Johnson's No. 2 Scott, 150 ft. N and 2,490 ft. W of SE cor., Sec. 7, Blk. 19, Lavaca Navigation Co. ..... Spudded and shut down 720 ft.
Magnolia Petroleum Co.'s No. 7 Mary Foster, 330 ft. from N and W line of Sec. 17, Blk. 29, Twp. 1s, T.&P.R.R. Sur. ..... Spudding 65 ft.
Morrison et al's No. 2 Morrison, 2,390 ft. from N and 660 ft. from E of Sec. 31, Blk. 28, Twp. 1n, T.&P. R.R. Sur. ..... Standard rig.
Seiger's No. 1 Scott, C of NE of SW, Sec. 36, Blk. 17, S.P.R.R. Sur. ..... Shut down 730 ft.
Teas & Wheeler's No. 1 Radford, 1,320 ft. N and W of Sec. 1, Blk. 27, T.&P. Sur. ..... Total depth 4,818 ft.; cem. hole.

NOLAN COUNTY

Gibson & Johnson's No. 1 Bond, 1,320 ft. from N and 1,980 ft. from E of Sec. 42, Blk. 20, T.&P. Sur. ..... Drlg. 3,040 ft.

PECOS COUNTY

Amerada Pet. Corp.'s No. 1 University, 990 ft. from S, 2,310 ft. W, Sec. 13, Blk. 18, University Land ..... 3,000,000 ft. gas 991 ft.; shut down 1,723 ft.
Amerada Pet. Corp.'s No. 1-B University 1,650 ft. from W and 990 ft. from S, Sec. 32, Blk. 16 ..... Location.
Arkansas Fuel Oil Co.'s No. 1-A University, 1,650 ft. from S and W of Sec. 32, Blk. 16 ..... 1,000,000 ft. gas 935 ft.; shut down 1,535 ft.; top pay 1,525 ft.; flowed 265 bbls. oil 24 hrs., 4 per cent water.
Atlantic O. P. Co.'s No. 1 Shearer, 330 ft. from NW and SW Sec. 107, Blk. 10, H.E.Y.N.R.R. Sur. ..... Location.
E. W. Bateman's No. 1 Cunningham, 330 ft. from S and W line of NE, Sec. 34, Blk. 11 ..... Shut down 1,691 ft.
Black & Dittman's No. 1 Pecos Valley, 160 ft. from SW and SE lines, Sec. 34, Blk. 3, H.&T.C.R.R. Sur. ..... Shut down 720 ft.
Buell & Hagan's No. 1 Byrne, 990 ft. from N and 2,310 ft. from E of Sec. 54, Blk. 10, H.&G.N.R.R. Sur. .... Show gas 1,325 ft.; show oil 1,325-49 ft.; shut down 1,400 ft.; making an estimated 550,000 ft. gas after shot.
California Co.'s No. 6 Smith, Lease No. 1, 1,700 ft. N and 330 ft. W of SE cor., Sec. 37, Blk. 194, G.C. &S.F.R.R. Sur. ..... Shut down 1,637 ft.
California Co.'s No. 2 Tippett, 2,016 ft. from S and 1,040 ft. from E of Sec. 2, D. F. Robertson Sur. ..... Temporarily abandoned.
Cardinal Oil Co.'s No. 4 Toborg, 150 ft. from S and E of W half Sec. 539, Arnold & Barrett ..... Drlg. 150 ft.
Cardinal Oil Co.'s No. 5 Toborg, 150 ft. from S. 432 ft. from E of W half Sec. 539,A.&B. Sur. ..... Drlg. 100 ft.
Continental Oil Co.'s No. 2 University, 330 ft. S and 1,680 ft. E of NW cor. of Sec. 6, Blk. 17, University Land ..... Hole full water 1,460 ft.; oil and gas show 1,678 ft.; preparing to plug back from 2,185 ft. where it has a hole full water; will be plugged and abandoned.
Continental Oil Co.'s No. 6 University, 330 ft. S and 3,031 ft. E of NW cor. of Sec. 6, Blk. 17, University Land ..... Cellar.
E. W. Bateman et al's No. 1 Cordova, 3,490 ft. from N and 1,515 ft. from W, Sec. 29, Blk. 11, H.&G.N.R.R. Sur. ..... Shut down 1,694 ft. (steel line measurement).
Crosby Prod. & Royalty's No. 3 Smith, 330 ft. from S and W line, Sec. 24, Blk. 194 ..... Shut down 1,797 ft.; top pay 1,620 ft.; flowed 200 bbls. per day, 4 per cent water.
Cosden Oil Co.'s No. 1 McDonald, 350 ft. from N and E of Sec. 1, H.E.&W.T. Sur. ..... Total depth 2,016 ft.; rigging up standard rig to drill 3,500 ft.
Cowley Evans' No. 1 Pecos Valley, 1,307 ft. from SE line, 907 ft. from SW line to Sec. 36, Blk. 3, H.&T.C.R.R. Sur. ..... Location.
Dixie Oil Co.'s No. 1 McKinzie, 3,300 ft. from N and 2,025 ft. from W of Sec. 15, Blk. 604, G.C.&S.F. ..... Drlg. 730 ft.
Dixie Oil Co.'s No. 1 Toborg, 150 ft. from SW line of E half of Sec. 539, Arnold & Barrett Sur. ..... Drlg. 150 ft. on new hole.
Freeman et al's No. 1 Pecos Valley, 150 ft. from NW and SW of NE half of S. Sec. 36, Blk. 3, H.&T.C. Sur. ..... Increase in water 1,535 ft.; shut down 1,708 ft.
A. M. Griffith's No. 1 Ferrenbach et al, 2,112 ft. from W line, 1,320 ft. from S line, Sec. 9, Blk. 603, G.C.&S.F. Sur. ..... Shut down 1,285 ft.
Geyer-Frates' No. 1 White-Baker, 2,310 ft. from N and E line of Sec. 29, Blk. Z, T.C.R.R. Sur. ..... Drlg. 1,815 ft.
Harrison & Cromwell's No. 1 White-Baker, 2,310 ft. from S and E, Sec. 42, Blk. 11, H.&G.N.R.R. Sur. .... Oil show 822-27 ft.; hole full sulphur water 1,830-37 ft.; preparing to plug and abandon.
Humble Oil & Ref. Co.'s No. 2 Cunningham, 2,640 ft. from N, 330 ft. from W line of Sec. 48, Blk. 11, H.&G.N.R.R. Sur. ..... Rigging up.
Hussman Oil Co.'s No. 1 Esters, 960 ft. from N and 300 ft. E, Sec. 83, Blk. OW, T.M.R.R. Sur. ..... Shut down 660 ft.
Independent O. & G. Co.'s No. 1 Phelps, 150 ft. N and W of N half of NE, Sec. 26, Blk. 11, H.&G.N.R.R. Sur. ..... Hole full sulphur water 2,395-2,401 ft.; shut down 2,404 ft.
J. L. Kennedy's No. 1 Roberts, C of Sec. 78, Blk. 3, T.&P.R.R. Sur. ..... Shut down 2,506 ft.
Kirby Pet. Co.'s No. 1 Stockton Cattle Co., 330 ft. from N and E, Sec. 2, T.C.R.R. Sur. ..... Shut down 1,460 ft.
Landreth Prod. and Henshaw Bros.' No. 1-E University, 330 ft. N and W of SE cor. W half NE, Sec. 13, Blk. 18, University Land ..... Fishing 940 ft.
Landreth Prod. and Henshaw Bros.' No. 2-E University, 330 ft. S and E of NW cor. of W half of NE, Sec. 13, Blk. 18, University Land ..... Top salt 895 ft.; top pay 1,675 ft.; flowed 180 bbls. 24 hrs.; total depth 1,705 ft.; flowing 85 bbls. daily.
Landreth Prod. and Henshaw Bros.' No. 3-F University, 330 ft. from N and E lines of SW, Sec. 3, Blk. 16, University Land ..... Drlg. 955 ft.
Landreth Prod. and Henshaw Bros.' No. 2-I University, 330 ft. S and W of NE, Sec. 24, Blk. 18, University Land ..... Cellar.
Mauch & Kroger's No. 1 Holmes, Sec. 5, Blk. 178, T.C. Sur. ..... Shut down 1,510 ft.
Mazda Oil Co.'s No. 1 Cordova Union Land Co., 2,310 ft. from N and 990 ft. from E of Sec. 103, Blk. 11, H.&G.N. Sur. ..... 800 ft. sulphur water 1,680-89 ft.; drlg. 1,750 ft.
Merrick-Bristow's No. 1 Neville, 330 ft. from S and W, Sec. 42, Blk. 12, H.&G.N.R.R. Sur. ..... Top salt 645 ft.; shut down 1,670 ft.; will deepen.
R. E. Moore's No. 1 Arnold, 1,320 ft. from S and 660 ft. from E lines of Sec. 18, Blk. 1, H.&T.C.R.R. Sur. .... Show oil 1,216 ft.; show oil 1,408 ft.; pulling 8-in. casing; shut down 1,615 ft.
Mid-Kansas Oil & Gas Co.'s No. 8 M. A. Smith, 250 ft. N and 1,005 ft. W of NE cor., Sec. 21, Blk. 194, G.C.&S.F. Sur. ..... Shut down 823 ft.
H. T. O'Neal's No. 1 Power, 2,640 ft. from N and 150 ft. from W, Sec. 1, Blk. 132, T.&St.L.R.R. Sur. ..... Shut down 200 ft.; moved material off.
J. D. O'Mara's No. 1 Bennett, Sec. 592, 1,460 ft. from S, 150 ft. from E, G.C.&S.F. Sur. ..... Fishing 875 ft.
J. D. O'Mara's No. 1 Streety, C of Sec. 1, W. P. Howard Sur. ..... Shut down 1,712 ft.
Pecos Crude Oil Pur. Co.'s No. 4 Pecos Valley, 770 ft. from SW and 1,320 ft. from SE of W, Sec. 22, Blk. 10, H.&G.N.R.R. Sur. ..... Drlg. 1,085 ft.; top salt 985 ft.
Peren Oil Co.'s No. 2 Eaton, C of E of W, Sec. 27, Blk. 3, H.&T.C.R.R. Sur. ..... Location.
M. M. Rowan's No. 1 University, NE, Sec. 25, Blk. 16 ... Total depth 2,490 ft.; plugged back 1,815 ft.; machine moved off.
Phillips Pet. Co.'s No. 1 Byrne, 220 ft. out of NE cor. S 215 ac. Sec. 77, Blk. OW, University Land ..... Drlg. 805 ft.
Phillips Pet. Co.'s No. 3 Monroe, 3,860 ft. from N and 660 ft. from E Sec. 39, Blk. 194, G.C.&S.F. ..... Cellar.
Phillips Pet. Co.'s No. 5 Ramsey, 330 ft. from N and 1,650 ft. from W of Sec. 17, Blk. 194 ..... Spudding.
Southern Crude Oil Pur. Co.'s No. 1 Tippett, 150 ft. S of S line, Sec. 539, and 382 ft. from E of their 75-ac. lease, Sec. 61, Blk. 194 ..... Drlg. 250 ft.
Shell Pet. Corp.'s No. 1 Percival, 330 ft. from N and E of SE, Sec. 199, Blk. 3, I.&G.N. Sur. ..... Location.
Shell Pet. Corp.'s No. 1-D University, 1,650 ft. from E and 990 ft. from W of Sec. 32, Blk. 16 ..... Location.
Sides & Cloyd's No. 2 Blackstone & Slaughter, C NW of Sec. 34, Blk. A-2, T.&C.R.R. Sur. ..... Shut down 362 ft.; waiting on casing.

Simms Pet. Co.'s No. 1 University, 1,650 ft. N and 330 ft. W of SE cor. Sec. 21, Blk. 19, University Land ... Shut down 350 ft.
Skelly Oil Co.'s No. 1 Bowers, SW cor. N half SE, Sec. 31, Blk. 16 ... Initial production 58 bbls. 1,649-50 ft.; swabbed 45 bbls. day; total depth 1,676 ft.; plugged back to 1,670 ft.; to clean out and pump.

Southern Crude Oil Pur. Co.'s No. 1 McKenzie, 150 ft. from N and 635 ft. from E of Sec. 2, Blk. 10, G.C. &S.F.R.R. Sur. ... Drlg. 435 ft.
Transcontinental Oil Co.'s No. 1 University ... Drlg. 4,840 ft.
Transcontinental and Arkansas Natural Gas Co.'s No. 1 Matthews, 330 ft. from S, 1,060 ft. from E, Sec. 10, Blk. 194 ... Topped lime 1,444 ft.; 10 bbls. oil; top pay 1,441 ft.; total depth 1,520 ft.; flowed 150 bbls. first 24 hrs.; now flowing 60 bbls. per day.

Transcontinental Oil Co.'s No. 1 Smith, 2,310 ft. from N and 1,060 ft. from E of Sec. 10, Blk. 194, G.C.&S.F. R.R. Sur. ... Location.
Trees Oil Co.'s No. 3 Trees, 330 ft. from S and W of Sec. 90, Blk. 8, H.&G.N. Sur. ... Drlg. 1,305 ft.
World Oil Co.'s No. 2 University, Sec. 31, Blk. 16, 330 ft. from N, 2,310 ft. E ... 500,000 ft. gas 1,225-40 ft.; big flow oil 1,549 ft.; drlg. 1,612 ft.

World Oil Co.'s No. 1-C University, 1,650 ft. from N, 990 ft. W, Sec. 7, Blk. 20, University Land ... 1 bailer water 1,410-15 ft.; shut down 1,445 ft.

PRESIDIO COUNTY

Eastland Oil Co.'s No. 1 Tootle, C Sec. 17, Blk. 1, D.P. R.R. Sur. ... Spudded; shut down.

REAGAN COUNTY

Big Lake Oil Co.'s No. 1-C University, 2,598 ft. S and 250 ft. W of NE cor., Sec. 1, Blk. 2, University Land ... Top pay 2,903 ft.; 1,000 ft. fluid in hole; top pay 6,807 ft.; drlg. 8,368 ft.

Big Lake Oil Co.'s No. 4-C University, 1,120 ft. from N and 1,096 ft. from E of Sec. 1, Blk. 2 ... Showing oil and gas at 8,220 ft.; total depth 8,220 ft.; flowed an average 227 bbls.; 4,303,000 ft. gas 24 hrs.

Texon Oil & Land Co.'s No. 2-B University, 4,655 ft. from S, 250 ft. from W, Sec. 36, Blk. 9 ... Drlg. 4,507 ft.
Texon Oil & Land Co.'s No. 3-B University, 2,240 ft. from S, 920 ft. from W, Sec. 36, Blk. 9 ... To drill by pipe; total depth 2,990 ft.

REEVES COUNTY

Exploration Co.'s No. 1 A. A. Kinney, 1,500 ft. W of NE cor. Sec. 26, Blk. C-18, Public School Land, elev. 2,547 ft. ... Shut down 2,990 ft.
H. T. Hansford's No. 1 Williams, 150 ft. from S and W, Sec. 17, Blk. 6, H.&G.N. Sur. ... Shut down 380 ft.
Black & Fink's No. 1 Brooks, 1,980 ft. N and 660 ft. W, Sec. 16, Blk. 59 ... Shut down 858 ft.
Southern Crude Oil Pur. Co.'s No. 1 Kloh-Rumsey, 2,310 ft. N and W SE cor., Sec. 23, Blk. 51 ... Show oil 3,410-20 ft.; shut down 3,575 ft.

David R. Thompson's No. 1 A. A. Eddins, Sec. 9, Blk. C-1 ... Fishing 5,658 ft.

RUNNELS COUNTY

Gibson & Johnson's No. 1 Johnson, 2,310 ft. N and 1,650 ft. W of SE cor., Sec. 150, E.T.R.R. Sur. ... Spudding.
Gibson & Johnson's No. 2 Serratt, 2,310 ft. from S and 1,650 ft. from E of Sec. 150, E.T.R.R. Sur. ... Derrick.
George W. Boyce's No. 1 Lang, 2,310 ft. N, 6,900 ft. E, Sec. 262 ... Shut down for orders 1,365 ft.
McLean's No. 1 Clayton, 150 ft. from N line, 270 ft. from W line of Sec. 133 ... Shut down 1,185 ft.

SCHLEICHER COUNTY

Delmar Oil Co.'s No. 1 O'Harrow, C of NW, Sec. 56, Blk. 1, G.H.&S.A.R.R. Sur. ... Drlg. 1,735 ft.
Interstate's No. 1 Whitten, 1,320 ft. from N and W, Sec. 35, Blk. LL, T.C.R.R. Sur. ... Cem. casing hole; total depth 5,750 ft.

George Wilson's No. 1 Page, Sec. 40, Blk. L, 1,290 ft. from N, 1,470 ft. from W, G.H.&S.A.R.R. Sur. ... Drlg. 1,920 ft.

SCURRY COUNTY

Byrd & Harmon's No. 1 Murphy, Jr., 330 ft. from N and E of Sec. 114, Blk. 97, H.&T.C. Sur. ... Shut down 1,732 ft.
Camp Spring Oil & Ref. Co.'s No. 3 Guinn, 1,300 ft. from S, 300 ft. from E, Sec. 12, Blk. 3, H.&T.C.R.R. Sur. ... Fishing 3,805 ft.; est. 200,000 ft. gas at 3,775 ft.

I. B. Mimms et al's No. 1 J. J. Koonsman, Sec. 216, Blk. 2, H.&T.C.R.R. Sur. ... Spudded and shut down 300 ft.
G. E. Dickman and R. B. Pender et al's No. 1 F. C. Davis, 1,000 ft. N and 1,770 ft. W of SE cor. of Sec. 275, Blk. 2, H.&T.C. Sur. ... Shut down 4,325 ft.
E. L. Smith Oil Co.'s No. 1 Moore, 1,320 ft. from S and W, Sec. 379, Blk. 97 ... Top salt 750 ft.; encountered 500,000 ft. gas 1,510 ft.; oil show 2,215 ft.; drlg. 3,625 ft. hard lime.

Transcontinental Oil Co.'s No. 1 Peckham, 330 ft. from S and W of R. N. Miller Sur. ... Rigging up standard tools.

SUTTON COUNTY

Independent Oil & Gas Co.'s No. 1 Willson, Sec. 30, Blk. A, 1,650 ft. from N, 2,310 ft. from W ... Location.

TAYLOR COUNTY

Condor Pet. Co.'s No. 1 Allen, C of NW, Sec. 220, Blk. 64, H.T.C.R.R. Sur. ... Rigging up.
John B. Jameson's No. 1 Webb, 1,170 ft. S and W of NE cor., Sec. 46, Lunatic Asylum Land ... Show oil 4,917 ft.; shut down 5,304 ft.

TERRELL COUNTY

Big Bend Oil Co.'s No. 1 Bassett, C NW, Sec. 155, Blk. D, M.-K.-T.R.R. Sur. ... Shut down 1,285 ft.
Keck Pecos Trust Co.'s No. 1 Hamilton, C Sec. 6, Georgetown Ry. Sur. ... Drlg. 3,065 ft.
Mrs. J. B. McPhee's No. 1 Sam Belt, C Sec. 78, Blk. D-7, E.L.R.R. Sur. ... Shut down 880 ft.
Transcontinental Oil Co.'s No. 1 Goode, 2,152 ft. from E and 330 ft. from S, Sec. 26, Blk. 161, G.C.&S.F.R.R. Sur. ... Drlg. 1,330 ft.
Woodley & Jones' No. 1 Pankenham, C SE NW, Sec. 43, Blk. B-2, C.C.S.D.&N.G.R.R. Sur. ... Shut down 625 ft.

TERRY COUNTY

Kingsland Oil Prod. Co.'s No. 1 Brownfield, C NW SW SW, Sec. 7, Blk. 1-A, E.L.R.R. Sur. ... Fishing bailer 5,080 ft.

TOM GREEN COUNTY

Cannon et al's No. 1 Rust, 990 ft. S, 990 ft. W of NE cor. of Sec. 745 ... Location.
Ellis et al's No. 1 Lewis, 450 ft. S and 150 ft. E of SE cor. of J.W. Sur. in Albert Black Sur., Sec. 75 ... Show oil 342 ft.; cleaning out 443 ft.; shot 20 qts.; no results.

Fitzgerald & Taliaferro's No. 1 Bennett, C SW, Sec. 1,628, E. H. Ringer ... Total depth 2,447 ft.; plugged back to 2,405 ft. to straighten hole.

E. W. Wiley et al's No. 1 Maier, 200 ft. from E, 110 ft. from N, Sec. 6, Blind Asylum Land ... Shut down 250 ft.

UPTON COUNTY

Gulf Prod. Co.'s No. 3-B Hughes, 160 ft. N and 161 ft. W of most southerly SE cor. of their 200-ac. lease "B" out of Wm. Teer Sur. ... Rig.
Pure Oil Co.'s No. 3 Hughes, 150 ft. S and 767 ft. E of NW of their 300 ac., Sec. 4, Wm. Teer Sur. ... Shut down 610 ft.

Pure Oil Co.'s No. 4 Hughes, Sec. 4, 330 ft. S and E SW cor., Snowden & McSweeney lease ... Top pay 2,223 ft.; shut down 2,350 ft.; swabbed 20 bbls. oil.

Snowden & McSweeney's No. 3 Hughes, 330 ft. from S and W of 80-ac. lease, Sec. 4, Wm. Teer Sur. ... Top salt 690 ft.; shut down 1,650 ft.

T. P. Coal & Oil Co.'s No. 1 Belcher, 1,320 ft. from N and 2,310 ft. from W line, Sec. 10, Blk. 4½, G.C.& S.F.R.R. Sur. ... Spudding.
T. P. Coal & Oil Co.'s No. 1 Reese, 330 ft. from N and E line, Sec. 2, Blk. 3 ... Drlg. 970 ft.; top salt 910 ft.

VAL VERDE COUNTY

Independent Operators' No. 1 Whitehead, SE SE Sec. 30, Blk. 4, L.&G.N. Sur., elev. 1,175 ft. ... Shut down 4,850 ft.
O. O. Owen's No. 1 Mills, Sec. 128, Blk. 1, L.&G.N. Sur., elev. 2,130 ft. ... Gas sand 2,491-2,520 ft.; tested 125,700 ft. gas; shut down 5,550 ft.

Phantom Oil Co.'s No. 1 Ingram, 175 ft. W of E line and 300 ft. N of S line, Sec. 44, Blk. D-8, E.L.&R.R. Sur. ... Show oil 1,535 ft.; drlg. 2,410 ft.
Valvert Oil Corp.'s No. 1 Bassett, C NE, Sec. 47, Blk. Y ... Shut down 4,009 ft.

WARD COUNTY

Alpine Oil & Gas Co.'s No. 1 Dakan, 228 ft. from NE and 150 ft. from SE line, Tract 8, Sec. 11, Blk. 5, H.&T.C. Sur. ... 1,000 ft. oil in hole; top pay 2,148 ft.; total depth 2,210 ft.; swabbing 30 bbls. per day.

E. J. Anderson's No. 1 Johnson, 150 ft. N, 346 ft. E, Sec. 7, Blk. 32, H.&T.C.R.R. Sur. ... Top salt 815 ft.; total depth 2,183 ft.; top pay 2,155 ft.; flows about 10 bbls. per day while cleaning out.

Atlantic et al's No. 1 Dorr, 1,730 ft. S, 990 ft. W, Sec. 2, J. Howe Sur. ... Shut down 1,697 ft.
Atlantic and Delmar's No. 7 Hayzlett, 1,650 ft. from NE and NW of Sec. 17, Blk. 5 ... Location.
Fugler et al's No. 1 Grand Falls townsite, 185 ft. SE of NW line and 500 ft. NE of NE, Sec. 7, Blk. 32, H.&T.C. Sur., located Sec. 11, Blk. 5, H.&T.C. Sur. ... Drlg. 2,177 ft.; 1,600 ft. fluid; estimated 2,000,000 ft. gas; top pay 2,151 ft.

Grand Falls Oil Co.'s No. 1 Boogher-Holden, 2,598 ft. S, 4,026 ft. E, Sec. 11, Blk. 5, H.&T.C.R.R. Sur. ... Shut down 800 ft.
Gulf Prod. Co.'s No. 3 Hutchins, 2,310 ft. from N and 330 ft. from W, Sec. 1, Blk. F, G.M.M.B.&A. Sur. ... Top salt 1,035 ft.; top brown lime 2,310 ft.; increase in gas 2,608-10 ft.; drlg. ahead 2,610 ft.

Gulf Prod. Co.'s No. 7 O'Brien, 320 ft. S and W, Sec. 22, Blk. F, G.M.M.B.&A. Sur. ... Hole full sulphur water 3,408 ft.; slopped over casing; drlg. ahead at 3,408 ft.

Gulf Prod. Co.'s No. 3 Wristen Bros., 220 ft. NE of SW and 220 ft. SE of NW, Sec. 18, Blk. 5, H.&T.C. Sur. ... Show gas 1,960-70 ft.; filling up with sulphur water 2,520-27 ft.; salt water at 2,545 ft.; shut down.

F. H. E. et al's No. 1 Wristen, 990 ft. from S and W lines of Sec. 26, Blk. B-28 ... Top salt 700 ft.; shut down 2,970 ft.

Tex-Oil Production Co.'s No. 1 Redman, 1,980 ft. NE of SW line and 1,980 ft. SE of NW line, Sec. 152, Blk. 34, H.&T.C.R.R. Sur. ... Show gas 2,806-09 ft.; shot 30 qts. 3,245-75 ft.; cleaning out; drlg. 3,375 ft.; shot 120 qts. from 3,240-75 ft.

Mid-Continental's No. 1 Conway, 2,316 ft. E, 922 ft. S, Sec. 23, Blk. 29, Public School Land ... Drlg. 3,180 ft.
Penn and Atlantic's No. 2 Bennett, 2,310 ft. S line, 1,650 ft. W line, Sec. 16, Blk. 34, H.&T.C.R.R. Sur. ... Shut down 2,262 ft.
Penn and Atlantic's No. 1 Cooper, 330 ft. from NE and 990 ft. from NW of Sec. 43, Blk. 34, H.&T.C. Sur. ... Bailing 6 bailers water, 5 bailers oil; show oil 2,657 ft.; drlg. 2,748 ft.

Shell Pet. Corp.'s No. 1 Owens, located NE cor. of Sec. 16, Blk. 15, H.&T.C.R.R. Sur. ... Top pay 2,886-93 ft.; increase at 2,909 ft. and 3,023-32 ft.; shot 90 quarts from 2,473-93 ft.; increase in oil 3,022-32 ft.; drlg. 3,530 ft., gray lime.

Shipley et al's No. 4 Hayzlett, 2,050 ft. NW of SE and 2,420 ft. NE of SW line of Sec. 17, Blk. 5, H.&T.C. R.R. Sur. ... Top salt 720 ft.; shut down 2,546 ft.; plugged back 2,538 ft.; shot 90 qts. from 2,473-93 ft.; mudded and shut down.

Shipley et al's No. 5 Hayzlett, assume common line Secs. 16 and 17 is N and S, 220 ft. S and 1,910 ft. W, Sec. 17, Blk. 5 ... Rig.
Shipley et al's No. 1 Monroe, 330 ft. SE SW, Sec. 3, Blk. 1 ... Shut down 385 ft.
Southern Crude Oil Prod. Co.'s No. 1 Harris, 1,458 ft. from N and 1,406 ft. from E of Sec. 30, Blk. B-19 ... Location.
Sturm & Paine's No. 1 Cummins, 748 ft. from NE and 155 ft. from NW of Sec. 7, Blk. 32, H.&T.C.R.R. Sur. ... Shut down 780 ft.
Sun Oil Co.'s No. 2 Sealy, 330 ft. from N and E of Sec. 88, Blk. F, G.M.M.B.&A. Sur. ... Drlg. 1,715 ft.

WINKLER COUNTY

A. W. Phillips' No. 2 Brown et al, 2,000 ft. S and W of NE, Sec. 4, Blk. B-5, Public School Land ... Top salt 1,300 ft.; shut down 2,832 ft.; show oil 2,775-85 ft.

Bashara et al's No. 2 Bashara, 990 ft. from S, 2,310 ft. from E, Sec. 17, Blk. B-3, Public School Land ... Top brown lime 2,306 ft.; top white lime 3,008 ft.; 40,000,000 ft. gas at 3,030 ft.; flowed 12½ bbls. through liner Jan. 30 and 132 bbls. Jan. 31.

Cinderella Syndicate's No. 1 Hendricks, 330 ft. N, 1,650 ft. W, Sec. 42, Blk. 26, Public School Land ... Total depth 150 ft.; rig.
Humble Oil & Ref. Co.'s No. 2 Walton, 2,310 ft. from N and W of Sec. 47, Blk. 26 ... Top lime 2,263 ft.; top salt 960 ft.; total depth 2,970 ft.; top pay 2,770 ft.; initial production 397 bbls.

Liner Drlg. Co.'s No. 1 Campbell, 330 ft. from N and E cor., Sec. 2, Blk. B-5 ... Top brown lime 2,510 ft.; shut down 3,685 ft.

Shell and The Texas Company's No. 1-B Cowden, 660 ft. from S and W of Sec. 39, Blk. B-5, Public School Land ... Location.
Sun Oil Co.'s No. 1 Sealy, 2,310 ft. N line, 330 ft. from W line, Sec. 52, Blk. F, C.M.M.B.&A. Sur. ... Underreaming 12½-in. casing; total depth 1,445 ft.

EXAMINATION FOR GEOLOGIST

The United States Civil Service Commission announces an open competitive examination for assistant geologist. Applications must be on file not later than March 12. The entrance salary is $2,600 a year. The duties are to perform, under immediate or general supervision, work in geology and related subjects, such as carrying on ordinary geologic mapping, making and recording geologic observations, studying mineral deposits, identifying rocks, fossils and ores, and preparing reports embodying the results of the work done. The optional subjects are economic geology, ground-water hydrology, paleontology, petrology and stratigraphy. Competitors will not be required to report for examination at any place, but will be rated on their education, training, experience and on writings.

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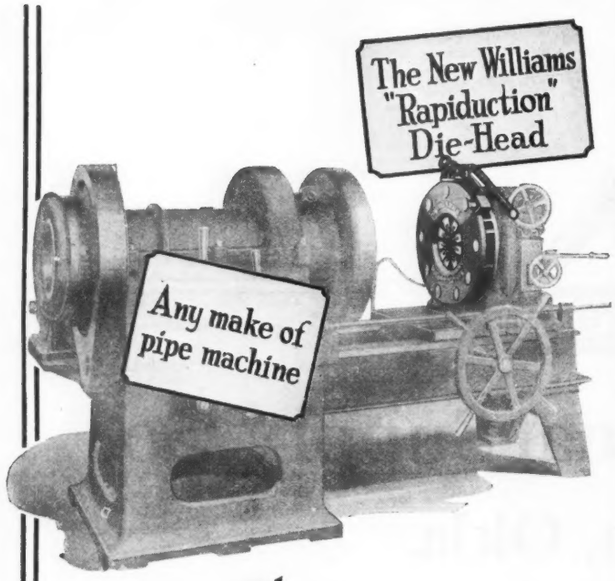

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This unique die-head gives you the latest engineering development for low-cost threading, with a definite increase in production.

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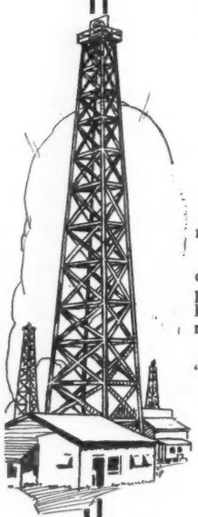

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WILLIAMS RAPIDUCTION

Pipe, Nipple and Bolt Threading Machine

OKLAHOMA FIELDS

(Continued from Page 70)

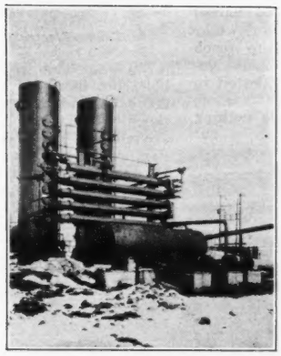
Company, farm—	S.T.R.	Wells	Prod.
Banta	14-7-4	3	174
Billington, C.	11-7-4	1	7
Billington, E.	22-7-4	1	297
Brandenburg	18-7-5	5	1,199
Bullock	18-7-5	1	1
Caudle	13-7-4	2	51
Cherry "A"	26-7-4	5	114
Cherry "B"	26-7-4	3	12
Cherry, J. H.	13-7-4	1	Off
Clour	11-7-4	2	14
Davis, C. E.	24-7-4	1	8
Davis, Frank	15-7-4	2	9
Engle	34-7-4	1	45
Fyke, George "A"	20-7-5	1	63
Fyke, George "B"	20-7-5	2	149
Fyke, L. L.	20-7-5	1	3
Fyke, Tulle "A"	20-7-5	1	46
Fyke, Tulle "B"	20-7-5	2	39
Fyke, Tulle "C"	20-7-5	1	19
Fyke, Tulle "D"	20-7-5	2	135
Fyke, Tulle "E"	28-7-5	1	9
Green, B. M.	13-7-4	1	7
Green, Lulla	13-7-4	1	72
Quinn	20-7-5	1	22
Harden	12-7-4	2	143
Hatcock, C. D.	11-7-4	1	6
Hatcock, Lee	11-7-4	1	68
Harper, J. J.	19-7-5	1	9
Harper, James	19-7-5	2	6
Hembree	19-7-5	4	40
Hilton, J. E.	22-7-4	2	1,189
Jones "A"	18-7-4	1	67
Jones, M.	8-7-4	1	9
Jordan	12-7-4	1	108
Kiner	17-7-5	1	2
Latimer	17-7-4	2	27
Louis, J. L.	15-7-4	1	5
Lynn, D.	21-7-4	1	566
Lynn, F.	21-7-4	2	164
Mull	15-7-4	2	1
Nicklass	31-7-5	2	36
Nona	11-7-4	1	68
Ogle	22-7-4	1	34
Richardson	15-7-4	2	267
Risenhoover	14-7-4	4	9
Robbins, J. M.	15-7-4	4	150
Robbins, Pearl	15-7-4	1	40
Rowe, I.	18-7-5	1	17
Rowe, M.	18-7-5	1	4
Shipshewano	19-7-5	4	40
Singletary, D.	13-7-4	1	Off
Singletary, F.	23-7-4	3	4
Singletary, T.	14-7-4	3	26
Tartar	15-7-4	2	415
Vieux, F.	13-7-4	1	8
Vieux, N.	13-7-4	1	1
White, Roy	20-7-5	1	1
Wilborn, Mary	24-7-4	2	298
Wilborn, S. A.	24-7-4	6	260
Willamette	11-7-4	1	24
Youts, Charles	20-7-5	5	212
Youts, C. A.	19-7-5	4	309
Youts, H. E.	20-7-5	5	416
Magnolia-Pierce:			
Hubanks	17-7-4	2	497
McCulloch et al:			
Bruno	25-7-4	5	720
Smith	25-7-4	6	743
Mid-Continent:			
Decker	8-7-4	1	40
Robbins	9-7-4	2	16
Guinn	20-7-5	1	18
Mid-Kansas:			
Getzelmann	25-7-4	4	510
Lunay	30-7-5	3	215
Minnehoma:			
Simms	16-7-4	3	185
Packard:			
Church	29-7-5	1	202
Panther:			
Town Lot	14-7-4	1	22
Town Lot	23-7-4	1	Off
Phillips:			
Cherry	25-7-4	2	80
Grace	2-7-4	1	40
Lydick	24-7-4	1	15
Stahl	30-7-5	1	216
Prairie:			
Bodkins	26-8-4	1	35
Desmond	25-7-4	4	76
Ellison	25-7-4	4	268
Gammon	30-7-5	8	2,513
Hembree, A. O.	19-7-5	4	831
Hembree	18-7-5	1	11
Linn	30-7-5	4	331
Meyer	32-7-4	1	21
Smith	30-7-5	3	26
Wolf	29-7-5	4	523
Youts	19-7-5	4	106
Prairie et al:			
Davis	18-7-5	4	43
Nesbit	18-7-5	2	160
Pugh	7-7-5	1	14
Prairie-Shaffer-Independent:			
Cummings	17-7-4	2	129
Reagan	17-7-4	3	897
Rice	17-7-4	2	73
Pure:			
Brandenburg	21-7-4	1	259
Dodson	26-7-4	2	113
Pure et al:			
Latimer	21-7-4	1	262
Thomas	26-7-4	4	412
Thrilkill	19-7-5	1	46
Tolen	1-7-4	1	65
Shaffer O. & R.:			
Cherry	25-7-4	4	151
Tolen	30-7-5	4	312
Shell:			
Hines	22-7-4	1	77
Smith	21-7-5	1	48
Stahl	30-7-5	1	31
Younts	28-7-5	1	47
Sinclair:			
Blandin	24-7-4	13	1,050
Brandenburg	7-7-5	3	421
Gruno	26-7-4	2	60
Coley	24-7-4	2	316
Gilbreath	25-7-4	2	577
M-Qua-Ka	11-7-4	1	49
Nadash	29-7-5	4	411
Neeley	25-7-4	4	373
Neeley "B"	25-7-4	2	672
Company, farm—	S.T.R.	Wells	Prod.
Nesbit	18-7-5	8	1,181
O-Kitchee	19-7-5	7	457
Sinclair et al:			
Kelly "A"	2-7-4	2	138
Skelly:			
Decker	16-7-4	2	231
Slick-W. Eagle:			
Latimer	16-7-4	3	259
Superior:			
Caudle	13-7-4	2	23
Jackson	36-8-4	1	37
Texas:			
Cherry	25-7-4	4	230
Goodin	25-8-4	1	45
Zoeller	30-7-5	1	28
Warner-Quinlan:			
Light	16-7-4	1	45
Westheimer-Daube:			
Freid	24-7-4	5	351
Garrett	23-7-4	2	51
Westheimer-Daube-Gypsy:			
McGee	23-7-4	5	61
Wyatt:			
Fee	10-7-4	1	19
Smith	26-7-4	1	35
Total		455	42,172
Asher Pool			
Commercial Development Co.:			
Townsite	19-6-4	1	85
Independent:			
Gardiner	19-6-4	1	119
Obermeyer:			
Townsite	19-6-4	1	Off
Prairie-Slick:			
Carpenter	19-6-4	1	386
Laster	19-6-4	8	674
Simms:			
Laster	19-6-4	5	752
Slick:			
Alexander	19-6-4	3	95
Bledsoe	20-6-4	1	15
Weldon	20-6-4	2	69
Slick-Amerada:			
Walker	19-6-4	2	41
Texola:			
Townsite	19-6-4	1	Off
Total		26	2,236
Sasakwa Pool			
Blackwell:			
Vanbuskirk	7-6-8	1	167
Carter:			
Aldridge	7-6-8	1	15
Davis	7-6-8	1	Off
Fleet	13-6-7	1	Off
Phillips	18-6-8	1	30
Spillman	7-6-8	2	635
Gypsy:			
Phillips	18-6-8	1	137
I. T. I. O.:			
Fleet	13-6-7	1	328
Holatka	7-6-8	2	195
Magnolia:			
Diamond	8-6-8	1	Off
Spillman	12-6-7	1	178
Prairie:			
Diament	12-6-7	1	22
Patton	18-6-8	2	88
Pure:			
Bates	13-6-7	7	6,823
Shell:			
Holatka	7-6-8	2	106
Signal:			
Bond	13-6-7	4	750
Sinclair:			
Davis "A"	17-6-8	7	2,865
Davis "B"	7-6-8	1	Off
Tiger	6-6-8	1	67
Texas:			
Bruner	9-6-8	1	Off
Bryan	9-6-8	1	30
Twin State:			
Marshall	7-6-8	1	Off
Total		41	12,487
Allen Pool			
Barbara:			
Mount	36-5-7	1	10
Barnsdall:			
Lusty	15-5-7	1	587
Blackwell:			
Fleet	13-5-7	3	1,040
Burke-Greis:			
Nitchee	18-5-8	5	855
Dixie:			
Payton	1-4-7	2	105
Gilcrease:			
Punka	17-5-8	2	449
Reed	18-5-8	2	206
Reed, W.	18-5-8	1	21
Gypsy:			
Peter	18-5-8	9	304
Peter	23-5-7	3	3,007
Homaokla:			
Adams	19-5-8	7	385
McCall, M.	17-5-8	11	298
Milner et al	17-5-8	4	25
Milner, J. B.	16-5-8	2	7
Ritchie	1-4-7	2	141
Wheeler	16-5-8	1	2
I. T. I. O.:			
Bingham	8-5-8	3	156
Mathis	13-5-8	2	266
Osborn	18-5-8	3	77
Loual-Carter:			
Bates	36-5-7	1	10
Louisiana O. & R.:			
Harjo	17-5-8	6	148
McElroy	17-5-8	5	177
Perry	20-5-8	13	1,189
Pumluste	8-5-8	4	313
Reed	18-5-8	4	469
Reed "A"	18-5-8	1	15
Statler	7-5-8	2	112
Warfle	20-5-8	3	151
Magnolia:			
Reed	17-5-8	6	458
Reed "A"	13-5-7	2	602
Parney	14-5-7	1	106
Mid-Continent:			
Fleet	7-5-8	15	1,601
Harjo	14-5-7	3	666
Prairie:			
Harris	8-5-8	1	10
Simena	11-5-7	1	15
Wyecka	24-5-7	1	20

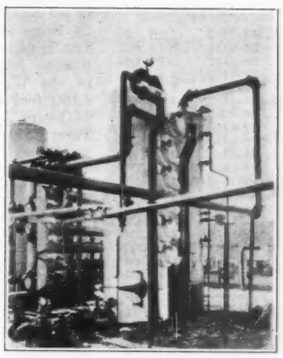
ANNOUNCING

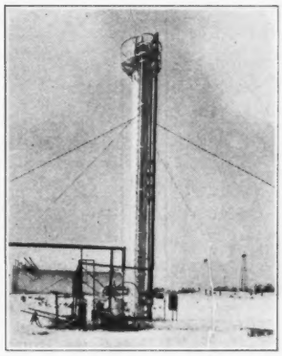
The opening of an Engineering Office at *Oklahoma City*

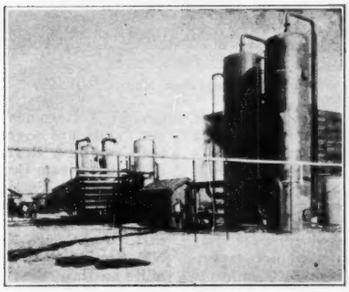
Located at 443 Commerce Exchange Building, Oklahoma City, Oklahoma, this new office has been established to further extend the service of our engineering personnel in the designing of TULSA TYPE Equipment—*Specified Through Performance.*

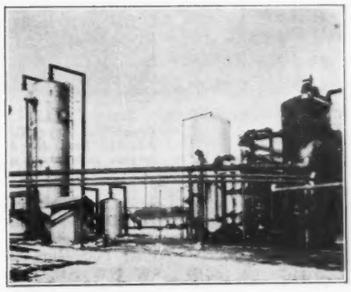
VIEWS OF SOME OF THE TULSA TYPE INSTALLATIONS IN THE OKLAHOMA CITY FIELD











TULSA
Boiler & Machinery Co.
TULSA OKLAHOMA
NATURAL GASOLINE PLANTS—TANKS—REFINING EQUIPMENT

Company, farm—	S.T.R.	Wells	Prod.
Ramsey:			
Butler	17-5-8	1	5
Butler, M.	20-5-8	1	12
Kerr	1-4-7	1	17
McElroy	17-5-8	1	36
Milner	17-5-8	9	1,020
Parker	17-5-8	2	46
Harjo	20-5-8	2	15
Smith	8-5-8	1	10
Warfle	20-5-8	1	5
Webb	20-5-8	5	100
Whitney	19-5-8	5	707
Shaffer, C. B.:			
Chapman	36-5-7	1	22
Yoakum	16-5-8	6	274
Sinclair:			
Amos "B"	7-5-8	1	170
Jefferson	23-5-7	5	1,306
Narcoche "A"	18-5-8	1	10
Narcoche "B"	18-5-8	5	100
Peter	18-5-8	2	87
Joanna	24-5-7	2	212
Sunray:			
Amos	7-5-8	1	10
Cully "A"	18-5-8	8	509
Cully "B"	18-5-8	8	712
Joanna	24-5-7	1	15
Nitchey	18-5-8	4	460
Nitchey, So.	19-5-8	3	522
Sarney	19-5-8	2	39
Texas:			
Hyde	8-5-8	5	352
Lewis	13-5-7	1	485
Lucy	18-5-8	11	1,715
Jefferson	23-5-7	1	5
Westheimer:			
Milliner	8-5-8	3	80
Westheimer et al:			
Wade	19-5-8	9	684
Westheimer-Daube:			
W. A. Patterson	29-5-8	1	40
Total		243	23,785

Oklahoma City Pool

Coline:			
Clour	25-11-3w	1	Off
Olds	24-11-3	3	5,203
Warren	18-11-2	2	Off
Cromwell-Franklin:			
Trosper Park	13-11-3	1	817
I. T. I. O.:			
Bodine-Anderson	30-11-2	1	36
Bodine, A.	24-11-3	1	Off
Bodine, S.	30-11-2	2	Off
Button	19-11-2	2	6,581
Canfield, L.	19-11-2	1	767
Drake	19-11-2	1	856
Emmerson, N.	30-11-2	2	600
Farley	19-11-2	1	4,348
Fortson, E.	24-11-3	1	Off
Fortson-Farley	24-11-3	2	4,135
Foster	24-11-3	1	Off
Fuzzell	19-11-2	1	3,881
Fuzzell, Thomas	13-11-3	1	2,033
Henning, K.	24-11-3	1	Off
Jennings	13-11-3	3	Off
Johnson	25-11-3	3	Off
Joyce, E.	25-11-3	1	Off
Mackey	24-11-3	1	Off
Oklahoma City	24-11-3	1	Off
Peterson, Sadie	25-11-3	1	1,119
Speegle et al	24-11-3	1	Off
Trosper	13-11-3	3	6,314
Verne	13-11-3	2	Off
Waters	25-11-3	2	395
Wheeler	13-11-3	2	Off
Williamson, Can	24-11-3	1	Off
Mid-Kansas:			
Browning	18-11-2	1	2,007
Fortson	24-11-3	5	1,158
Mollman	23-11-3	1	196
Trosper	19-12-1	1	202
Prairie-Slick:			
Hiddleston	19-11-2	5	4,477
Shaffer, J. C.:			
Childs	14-11-3	1	5,316
Shell:			
Petty	30-11-2	5	2,252
Sinclair:			
S. Land No. 54	36-11-3	1	Off
Stamper	30-11-2	6	661
Sinclair-Amerada:			
Kinter	30-11-2	2	Off
Slick, T. B.:			
Glidden	13-11-3	2	1,793
Zerkerle	13-11-3	1	Off
Skelly:			
Hoops	31-11-3	1	Off
Wirt Franklin:			
Lowery	12-11-3	1	3,586
Trosper Park	13-11-3	1	Off
Total		80	58,733

BARREN WASTE IS UNDERGOING BIG CHANGE

(Continued from Page 31)

October 12, 1927. It was completed in November, 1928, at 4,214 feet and in a production test over a period of 15 days it averaged 696 bbls. a day. The company then started an offset on the northeast in its No. 31 Capps, SW cor., Section 3-19-38, which was completed last August at 4,220 feet with an initial production of 850 bbls.

Since then the following wells have been completed: the Ohio Oil Co.'s No. 1 State, NE SE SW, Section 9-19-38, which is making around 25 bbls. a day of oil and some water at 4,208 feet after plugging off bottom water. This well is three-fourths of a mile to the south and west of the discovery and about marks the edge of the pool in that direction.

The Shell Petroleum Corp.'s No. 1 Terry, SE SW NE, Section 22-19-38, had sulphur water at 4,235-38 feet and was abandoned. It is a little more than 1 mile to the south of the nearest producer and marks the limit of the pool in that direction. Between the discovery and the Shell wells, the Midwest Refining Co.'s No. 24 Leach, NE SE NW, Section 15-19-38, averaged 430 bbls. a day from the pay at 4,103-36 feet. The Walker Oil Corp.'s No. 1 Terry, NW SW SE, Section 10-19-38, made 525 bbls. of oil and 4,000,000 feet of gas the first 24 hours at a total depth of 4,184 feet. The Midwest's No. 24 State, NE SE SW, Section 10-19-38, an offset on the west to the Walker well, was completed at 4,180 feet and made 686 bbls. the first 24 hours. The same company's No. 13 Terry, SE NE SW, Section 10, one location north of its No. 24 State, is flowing 35 bbls. an hour from the pay at 4,110-20 feet and is being completed. Shell Petroleum Corp.'s No. 1 Thorpe, SW NW SE, Section 10, an offset on the north to the Walker well, is coming in as a producer as this is written. The Midwest is drilling in its No. 6 Wright, NW cor. SW, Section 14-19-38, and Harrison and others' No. 1 Tatum, NW SW SW, Section 35-18-38, is temporarily shut down at 275 feet. Locations have been made by the Prairie Oil & Gas Co. in its No. 1 Delmar, NW SW NE, Section 15-19-38; the Sun Oil Co.'s No. 1 State, NE cor., Section 5-19-38; the Ohio Oil Co.'s No. 1 State, NE cor. SW, Section 30-18-38; and the Walker Oil Corp.'s No. 2 Terry, SW cor. SE, Section 10-19-38. None of the last named have yet started drilling. Several weeks ago the operators endeavored to reach an agreement with the land commissioner of New Mexico to conserve the oil in the ground inasmuch as there was no pipe line to the field and while nothing definite came of the meeting, it is not expected there will be any extensive drilling of offsets at this time.

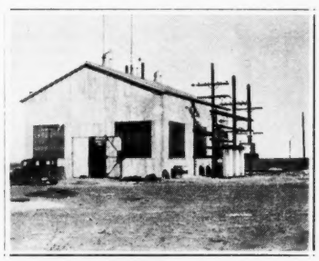
East side of Main Street of Lea, N. Mex.

Cranfill & Reynolds' No. 1 State, Section 2-21-33, Lea, N. Mex., said to be the largest pumper in the United States. It is making 2,200 bbls.

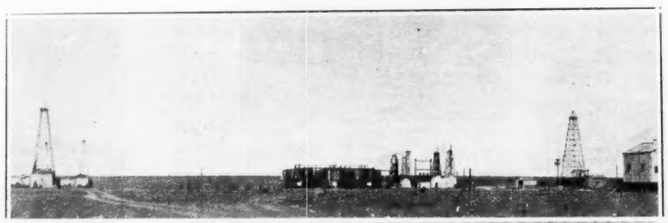
Humble Gets Gusher

In the meantime, while these wells were being drilled in with an estimated average settled production of 500 bbls. a day, the Humble Oil & Refining Co.'s No. 1 Bowers, C NE SE, Section 30-18-38, was being drilled. It has just been completed and makes an important change in the Hobbs picture. The wells previously drilled showed comparatively little gas and gushers were not expected. But the Humble's well, 3 miles to the northwest, which made 50,000,000 feet of gas in the upper horizons, blew in at 4,106 feet as a gusher and was gauged for 1 hour. In that period it put 464 bbls. in the tank. At the end of the hour the flow appeared to be stronger than at the beginning and the well is estimated good for at least 12,000 bbls. a day. The oil is 37.5 gravity and good quality. The well is shut in.

The Lea Pool, near the Lea Townsite, is running close with the Hobbs Pool in activity and completions. The discovery well was brought in March, 1929, in the Texas Production Co.'s No. 1 Beulah Lynch, NW cor. SE, Section 34-20-34, at a total depth of 3,731 feet with an average production of 1,000 bbls. a day. It is near the center of the section, all of which is owned by the Texas company and the next drilling was 1½ miles to the southeast where Cranfill & Reynolds' No. 1-B State, NE cor., Lot 9, Section 2-21-33, was completed last August at 3,755 feet. This well started off at 1,700 bbls., but increased to a maximum of 2,200 bbls. and is now averaging between those two figures. Drilling has centered around the Cranfill & Reynolds well, that firm completing two offsets, the Texas Production Co. two offsets to the Cranfill & Reynolds' wells, and the Continental Oil Co. one offset on the east to Cranfill & Reynolds' No. 1-B State. The new wells are averaging just as big as the Cranfill & Reynolds' discovery. Amerada Petroleum Corp.'s No. 1 State, SW cor., Lot 7, Section 1-23-33, one-half mile to the east, missed the pay and was abandoned, marking the limits on the east. Joe Cook's No. 1 State, SW NW NE, Section 12-21-33, milled the pay 1½ miles south of the Amerada well and was abandoned.



Texas Electric Co.'s Lea plant.



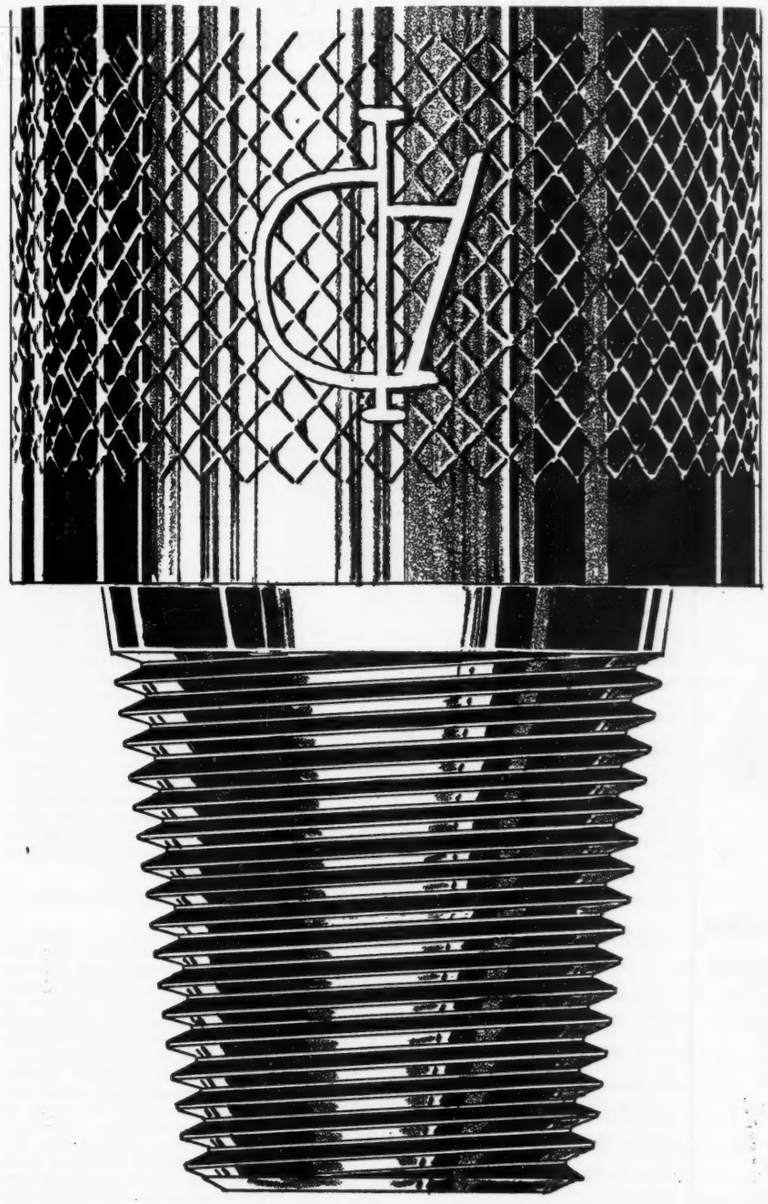
View of the Lea, New Mexico, oil field.

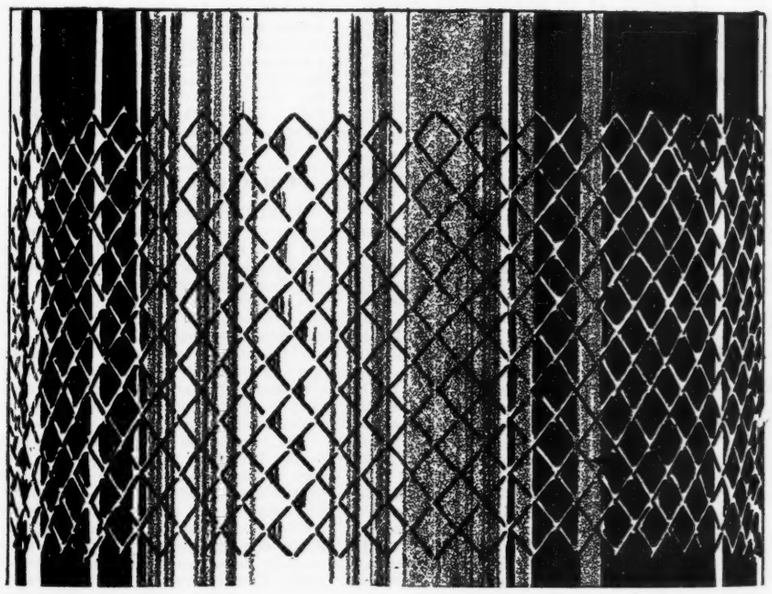
COMPLETIONS IN HOBBS POOL

Company, farm and location—	Elev.	Top salt	Top lime	Ttl. depth	Results
Midwest Ref. Co.'s No. 1 State, NE NE NE Sec. 9-19-38	3,532	1,085	3,800	4,214	696 bbls. initial production.
Midwest Ref. Co.'s No. 1 Capps, SW SW SW Sec. 3-19-38	3,602	1,640	....	4,220	850 bbls. initial production.
Walker Oil Corp.'s No. 1 Terry, NW SW SE Sec. 10-19-38	3,590	....	2,910	4,184	525 bbls. initial production.
Midwest Ref. Co.'s No. 24 State, NE SE SW Sec. 10-19-38	....	1,720	2,925	4,180	686 bbls. initial production.
Midwest Ref. Co.'s No. 24 Leach, NE SE NW Sec. 15-19-38	3,594	1,690	2,910	4,165	850 bbls. initial production.
Shell Pet. Corp.'s No. 1 Terry, SE SW NE Sec. 22-19-38	3,595	1,726	2,939	4,238	Sulphur water; abandoned.
Ohio Oil Co.'s No. 1 State, NE SE SW Sec. 9-19-38	3,602	....	2,950	4,208	P. B. from 4,312 ft.; 25 bbls. oil and water.
Humble Oil & Ref. Co.'s No. 1 Bowers, C NE SE Sec. 30-18-38	3,657	....	....	4,160	Gauged 464 bbls. one hour; 50,000,000 ft. gas at 3,687 ft.
Shell Pet. Corp.'s No. 1 Thorpe, SW NW SE Sec. 10-19-38	3,590	....	....	4,190	Drilling in.
Midwest Ref. Co.'s No. 1 Terry, SE NE SW Sec. 10-19-38	....	1,736	....	4,175	Drilling in and flowing.

COMPLETIONS IN LEA POOL

Company, farm and location—	Elev.	Top salt	Top lime	Ttl. depth	Results
Texas Prod. Co.'s No. 1 Lynch, NW NW SE Sec. 34-20-34	3,749	1,665	3,340	3,731	Av. 1,000 bbls. initial prod.
Cranfill & Reynolds' No. 1-B State, NE cor. Lot 9, Sec. 2-21-33	3,788	1,735	3,390	3,755	Initial production 1,700 bbls.; increased to 2,200 bbls. on pump.
Cranfill & Reynolds' No. 2-B State, NW cor. Lot 9, Sec. 2-21-33	3,789	1,870	3,395	3,765	250 bbls. first 24 hours.
Marland Prod. Co.'s No. 1 Flint, SE SE SE Sec. 28-20-34	3,737	....	3,315	3,750	Shows not comp.; abandoned.
Amerada Pet. Corp.'s No. 1 State, SW cor. Lot 7, Sec. 1-21-33	3,794	1,714	3,537	3,960	Sulphur water; abandoned.
Joe Cook et al's No. 1 State, SW NW NE Sec. 12-21-33	3,770	....	3,705	3,808	Abandoned.
Cranfill & Reynolds' No. 3-B State, SW cor. Lot 9, Sec. 2-21-33	3,798	1,875	3,418	3,780	Pumping average 1,200 bbls.
Continental Oil Co.'s No. 1 State, NW cor. Lot 12, Sec. 1-21-33	3,779	....	3,452	3,783	405 bbls. initial production.
Texas Prod. Co.'s No. 1-A State, SE cor. Lot 8, Sec. 2-21-33	3,770	1,840	3,380	3,771	Pumped 2,028 bbls. first 24 hours.
Texas Prod. Co.'s No. 2-A State, SW cor. Lot 8, Sec. 2-21-33	3,775	....	3,400	....	Topped pay at 3,779 ft.; drilling in.
Texas Prod. Co.'s No. 1-B State, SW cor. Lot 5, Sec. 1-21-33	3,755	1,810	3,390	....	Drilling.
Snowden & McSweeney's No. 1 State, NW NW SW Sec. 1-21-33	3,781	....	3,450	....	Drilling.





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GOVERNMENT STUDY OF SOILS AID TO PIPE LINE INDUSTRY

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Feb. 3.—The Bureau of Chemistry and Soils of the United States Department of Agriculture is lending aid to the United States Bureau of Standards and to the oil industry of the country by making its records available in the interest of the fight being made to protect pipe lines from soil corrosion.

For many years the Bureau of Chemistry and Soils has been making soil surveys all over the United States primarily in the interest of the farmer. The time came when it was realized that these analyses of soils were valuable in connection with the studies of soil corrosion of pipe lines and recently the bureau has transferred one of its chemists to the Bureau of Standards to work in conjunction with Kirk H. Logan in charge of the study of soil corrosion of pipe lines. This action promoted co-operative work between these two bureaus and promises to result in valuable assistance in promoting a more thorough knowledge of soil conditions affecting pipe lines.

A. G. McCall, chief of soil investigations, Bureau of Chemistry and Soils of the Department of Agriculture, is greatly interested in this co-operative work. Soil surveys that have been made by the Department of Agriculture have been plotted on a United States map showing just where this work has been done, with considerable areas that have not been covered at all. The Federal Government works with the states on practically a 50-50 basis in making soil investigations for agriculture. Because of this arrangement those states that have appropriated the largest amount of money for soil investigations are those that have been chiefly benefited. States that do not appropriate money have only had the advantage of reconnaissance work, leaving the detailed soil analyses for states that provide for half of the expense incurred.

Only recently the State of Oklahoma through its legislature provided appropriations of $20,000 for soil surveys for each of two years. Of course this work will provide information not only for agriculturists but also for pipe line companies contributing to knowledge of soils and their relationship to corrosion.

The State of Alabama has been practically surveyed 100 per cent by the soil investigations that have been made in that State.

West Virginia has had a very large amount of money expended and has been almost fully surveyed. Delaware and New Jersey have been covered and North and South Carolina have had a large amount of work done. The oil-producing states, which have great need for a knowledge of soil corrosion, have not paid as much attention to this work as some other states that are almost wholly dependent upon agriculture.

Now that soil corrosion is receiving more and more attention from pipe line companies it is expected the organization built up by the Department of Agriculture for analyzing the chemical properties of soils may be utilized more than ever in combating soil corrosion. There seems to be no reason why the conduct of such surveys should not be directed to a wider knowledge of the properties of soil to include additional information of special value to the pipe line industry and the close relationship now established between the Bureau of Chemistry and Soils and the Bureau of Standards points to such action.

KENTUCKY-TENNESSEE

(Continued from Page 58)

Small producers, dry holes and gas wells were found in the Ohio County Fields, as the shutdown prohibits drilling in the rich Stray sand areas of the county where the big production of Kentucky has been found for the past year.

S. R. Berry and others' test near the northeast corner of the Jake Smith farm, near Adaburg, 2 miles south of the Deanfield Pool, in Ohio County, produced 15 bbls. initial. In the Friendship Church area of the same county, Swarthout and others have a nice gas well on the Will Hartford farm, 1 mile northeast of the church. In the same field the Louisville Gas & Electric Co.'s No. 1 on the E. M. Royal farm, pumped 10 bbls. in 24 hours. Mecca Oil Co.'s No. 4 W. S. Neel farm, was dry at 542 feet. James C. Ellis and others' No. 4 on the Royal Heirs' 100 acres, same field, produced 15 bbls. initial from the Barlow sand. George Randolph and others' No. 1 on the W. G. Kirk 120 acres, pumped 5 bbls. initial from the Jett sand at a depth of 385 feet.

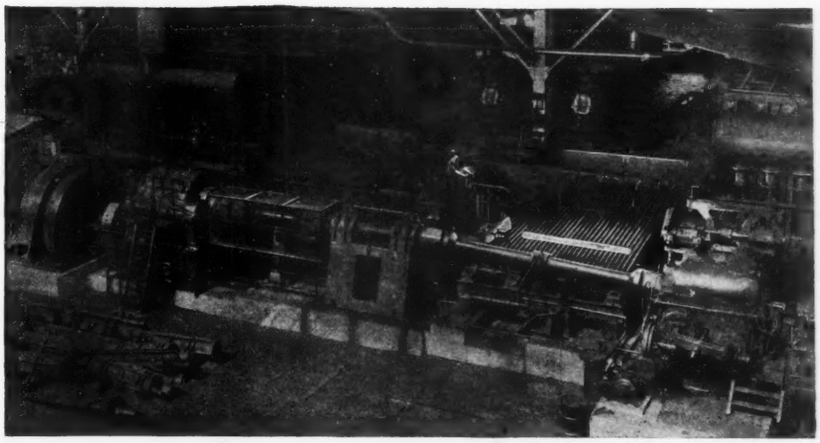
Niagara Field

There is a rush for leases in both Henderson and Webster Counties to the west of the Owensboro Field, where many eastern and western operators are getting a foothold and will do extensive development for both oil and gas. Some very nice wells have been found in the Niagara Field which ranges around 700 feet in depth and some of the wells start off at better than 100 bbls., while to the south in the Sebree Field of Webster County, excellent gas producers are found. The operators in the Niagara Field have had no outlet for the crude and that alone has held back real drilling activity. This will continue for only a short time as the Illinois Pipe Line Co. has completed its 4-inch oil line from its Utica Station in Daviess County to the Niagara Field with the exception of laying the line across the Green River at Delaware. It may require a couple of weeks to put the line across the river owing to the cold weather and high water. Hupp and Duff are securing acreage in the Niagara Field and will start active development as soon as the weather moderates. Albert J. Ewing, Cleveland, Ohio, operator, with Ohio associates is starting testing their holdings. Several wells are due for completion, which have been held back on account of storage facilities for their production. The Wittmer Oil & Gas Co., of Pittsburgh, Pa., has secured a number of leases and seems likely to get some nice shallow producers. The Wittmer Oil & Gas Co.'s No. 1 John Crosby is on top the sand, as is its No. 3 on the Wallace farm. Same company's No. 2 on the Fred Powell farm, in the Sebree Field in Webster County is in the sand, but the value of the well as a producer has not been determined. The Southern Oil Trust is also in the sand in No. 3 on the Farley, also in the Sebree Field. The Black Gold Oil Co. and the Ranger Oil Co. are in the sand at No. 2 on the Gish farm.

PUBLIC DOMAIN COMMISSION

WASHINGTON, D. C., Feb. 1.—The House of Representatives has passed a bill by a vote of 241 to 106 authorizing the President to create a commission to study and report on the conservation and administration of the public domain. This bill was asked for by the administration and under its terms the governors of each of 11 states in which the 190,000,000 acres of public domain are now distributed would appoint a member of the commission, and the others are appointive by President Hoover.

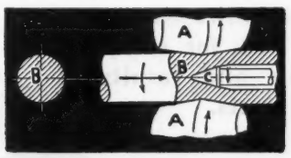
The commission is required to report to the President, to be submitted, with such recommendations as he may desire, by the first Monday in December, 1930. The purpose of the commission is to evolve a definite policy regarding the public domain, and the commission is to consider among other things, subsurface rights, flood control and other factors.



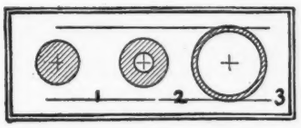
Pictured above is the first piercer in the J & L No. 2 Seamless Tube Mill at the Aliquippa, Pa., Works. One of the solid round billets, white hot, from which J & L Seamless Pipe is made, may be seen rolling down the skids, to enter the machinery in the right foreground, to be converted into tubular form. Compare the size of this powerful machinery with the operator, at his controls, in the center of the picture.

Right from the Start

J & L Strives for Seamless of Uniform Wall Thickness

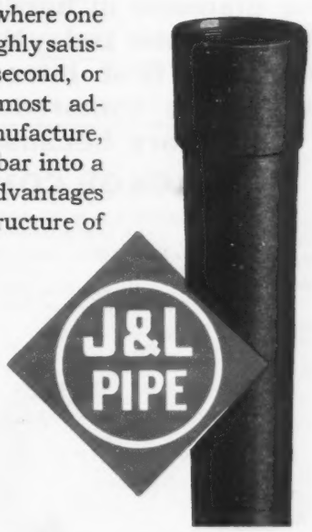


Sketch shows in cut-a-way view, the operation of the first piercer. The rolls, "A," carry the solid round billet, "B," over the piercing point, "C."



Development of cross section in the manufacture of J & L Seamless: 1. Before piercing; 2. After first piercing; 3. After second piercing.

IN producing all sizes of Seamless Pipe, except the smaller tubing where one piercing operation is thoroughly satisfactory, J & L employs also a second, or expanding, piercer. By this most advanced method of seamless manufacture, J & L converts the solid round bar into a tube gradually and easily. Advantages are, absence of strains in the structure of the steel and production of a tube of relatively uniform wall thickness right at the start. Together, these results make for uniform strength and dependability in the finished J & L Seamless when it goes into service in the field.



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BLACKOR

The Super Abrasion-Resistant Facing

GULF COAST FIELDS AND WILDCATS

(Continued from Page 50)

Sun Oil Co.'s No. 3 Bender (northwest) ..... Set 40 ft. screen 3,903 ft.; comp. flowing 1,500 bbls. pipe line oil daily; increased to 2,200 bbls.
The Texas Company's No. 1 Atlantic & Gulf, southeast .. Derrick.
The Texas Company's No. 30 Carroll, northeast ..... Drlg. gumbo and lime 2,142 ft.
The Texas Company's No. 36 Kohler, northeast ..... Drlg. sticky shale 4,028 ft.
The Texas Company's No. 2 Dunman, south side ..... Washing show gas 5,360 ft.
West Production Co.'s No. 2 Foster ..... Drlg. sandy shale 4,304 ft.

BLUE RIDGE—FORT BEND COUNTY

Sinclair Oil & Gas Co.'s No. 1 Blakely ..... Derrick.
Sinclair Oil & Gas Co.'s No. 4 Blakely (workover) ..... Rigging up to deepen.

PIERCE JUNCTION—HARRIS COUNTY

Anderson & Plummer's No. 6 Whitehead (workover) .... Fishing drill pipe 6,180 ft.
Gulf Production Co.'s No. 31 Taylor ..... Comp. flowing 900 bbls. 4,475 ft.
Marland Oil Co.'s No. 2 Prudential (workover) ..... Rigging up to deepen.
Navarro Oil Co. and Humble Oil & Refg. Co.'s No. 5 Dooley (workover) ..... Comp. flowing 200 bbls. fluid, 75 per cent water; now dead and rigging up to pump.
Navarro Oil Co. and Texas Exploration Co.'s No. 18 Dooley ..... Rig.
Pure Oil Co.'s No. 1 Herman (workover) ..... Total depth 5,019 ft.; plugged to 4,981 ft.
Pure Oil Co.'s No. 2 Herman, southwest ..... Location.
Rio Bravo Oil Co.'s No. 11-B Settegast ..... Drlg. sand and shale 3,160 ft.
Rio Bravo Oil Co.'s No. 12-A Settegast (workover) ..... Pumped salt water 5,015 ft.; to deepen.
Rio Bravo Oil Co.'s No. 17-A Settegast, west ..... Drlg. sand and shale 3,569 ft.
Rio Bravo Oil Co.'s No. 18-A Settegast, west ..... Derrick.
Saxet Gas Co.'s No. 5 Herman (southwest) ..... Set screen 4,161 ft.; failed to flow; to deepen.
Saxet Gas Co.'s No. 6 Herman, southwest ..... Drlg. 4,364 ft.
Saxet Gas Co.'s No. 7 Herman, southwest ..... Derrick.
Superior Oil Co.'s No. 3-A Whitehead ..... Shale showing oil 4,258 ft.; cem. casing.

LIBERTY—LIBERTY COUNTY

Empire Gas & Fuel Co.'s No. 11 Groggan ..... Derrick.
Sun Oil Co.'s No. 54 Mitchell ..... Drlg. sandy shale 3,536 ft.
The Texas Company's No. 5 Green (workover) ..... Fishing 3,300 ft.
Vacuum Oil Co.'s No. 1 Clarion, shallow pool ..... Drlg. sandy shale 900 ft.

HULL—LIBERTY COUNTY

W. B. Flynn's No. 8 Harrison (workover) ..... Drlg. 3,167 ft.
Empire Gas & Fuel Co.'s No. 11 Barngrover (workover).. Drlg. 3,786 ft.
Empire Gas & Fuel Co.'s No. 31 Barngrover ..... Derrick.
Humble Oil & Refg. Co.'s No. 25 Guedry ..... Drlg. shale 3,750 ft.
Ocean Springs Oil Co.'s No. 1-H Palmer ..... Drlg. 1,951 ft.
Republic Production Co.'s No. 57 Dolbear (workover) .... Drlg. 2,737 ft.
The Texas Company's No. 1 Barrow fee ..... Location.
The Texas Company's No. 8 Hannah-Vacuum ..... Drlg. sand and shale showing gas 4,632 ft.

BIG CREEK—FORT BEND COUNTY

Benedum & Trees' No. 1 J. F. Ahlers ..... Derrick.
Benedum & Trees' No. 1 Moore ..... Heaving shale 4,179 ft.; fishing.
Navarro Oil Co.'s No. 4 Hausler ..... Rig.
The Texas Company's No. 4 fee (workover) ..... Drlg. gumbo and lime 1,991 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 4 Mayes ..... Bailed dry 2,818 ft.; total depth 2,865 ft.
Pure Oil Co.'s No. 6-A Mayes ..... Abandoned in cap rock 3,290 ft.
Pure Oil Co.'s No. 9 Mayes ..... Drlg. hard sandy lime 2,467 ft.
Pure Oil Co.'s No. 4 Lost Lake ..... Spudded.

NASH—BRAZORIA COUNTY

Rycade Oil Corp.'s No. 26 Wisdom ..... Bailing 5,826 ft.

BATSON—HARDIN COUNTY

Ada Belle Oil Co.'s No. 133 Sun ..... Rig.
East Batson Oil Co.'s No. 9 Bates ..... Rig.

SOUR LAKE—HARDIN COUNTY

Lake View Oil Co.'s No. 8 Minor ..... Total depth 2,279 ft.
Gilbert Oil Co.'s No. 107 Gilbert ..... Derrick.
M. E. Peveto's No. 1 Merchant ..... Drlg. 759 ft.
The Texas Company's No. 305 fee ..... Derrick.

SARATOGA—HARDIN COUNTY

Rio Bravo Oil Co.'s No. 89 Cotton ..... Drlg. gumbo and shale 1,044 ft.
Rio Bravo Oil Co.'s No. 89-A Cotton ..... Rig.

ORANGE—ORANGE COUNTY

Sinclair Oil & Gas Co.'s No. 2 Leon (workover) ..... Pulling liner to deepen.

GOOSE CREEK—HARRIS COUNTY

Russell Ferrell's No. 4 Gillette (workover) ..... Comp. pumping 200 bbls., 9 per cent b.s. and water, 1,462 ft.
Humble Oil & Refg. Co.'s No. 77 Simms-Smith ..... Drlg. gumbo and lime 3,631 ft.
Jim McMurry's No. 4 Grace Addey ..... Rig.

SPINDLETOP—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 55 McFaddin (workover) ..... Set screen to test.
Yount Lee Oil Co.'s No. 75 McFaddin (workover) ..... Drlg. lime 4,700 ft.
Yount Lee Oil Co.'s No. 120 McFaddin ..... Tested salt water 4,578 ft.; to sidetrack.
Yount Lee Oil Co.'s No. 122 McFaddin ..... Comp. dry gas well 4,753 ft.
Yount Lee Oil Co.'s No. 123 McFaddin ..... Drlg. sand 3,976 ft.
Yount Lee Oil Co.'s No. 124 McFaddin ..... Rig.
Yount Lee Oil Co.'s No. 125 McFaddin ..... Rig.
Yount Lee Oil Co.'s No. 99 Gladys City ..... Drlg. gumbo 1,441 ft.
Yount Lee Oil Co.'s No. 13 Gladys City (workover) ..... Tested salt water 4,012 ft.; to sidetrack.
Yount Lee Oil Co.'s No. 100 Gladys City ..... Derrick.

WEST COLUMBIA—BRAZORIA COUNTY

Saxet Oil Co.'s No. 3 Hogg ..... Location.
The Texas Company's No. 26 Arnold ..... Rig.

NORTH DAYTON—LIBERTY COUNTY

John A. Deering's No. 6 fee ..... Drlg. hard, black, sandy shale 1,148 ft.
Humble Oil & Refining Co.'s No. 1 Jamison, south ..... Drlg. sand 3,395 ft.
Harrison Oil Co.'s No. 1 Jamison ..... Drlg. sand 3,397 ft.
Harvey Smith's No. 1 Simmons & Brown ..... Drilling.
The Texas Company's No. 1 Paraffine fee ..... Started drilling.

HIGH ISLAND—GALVESTON COUNTY

Gulf Production Co.'s No. 5-A Smith ..... Drlg. sand rock 4,520 ft.
Marrs McLean's No. 12 Cade (workover) ..... Drlg. 4,317 ft.
Marrs McLean's No. 17 Cade ..... Drlg. hard sand 3,173 ft.

ORCHARD—FORT BEND COUNTY

Gulf Production Co.'s No. 20 Moore ..... Drlg. 2,649 ft.

DAMON MOUND—BRAZORIA COUNTY

L. & M. Oil Co.'s No. 5 Wisdom ..... Cem. 6⅝-in. casing 2,305 ft.

REFUGIO—REFUGIO COUNTY

Herman F. Heep's No. 1 Rutherford ..... Swabbing; sand 3,674-3,709 ft.
Houston Gulf Gas Co.'s No. 1 Lambert ..... Coring 5,660 ft.
Houston Gulf Gas Co.'s No. 2 Lambert ..... Rig.
Houston Gulf Gas Co.'s No. 1-A Rose Lambert ..... Cem. 12½-in. casing 503 ft.
Houston Gulf Gas Co.'s No. 2 Morgan-Vance ..... Testing oil sand 3,683 ft.
Houston Gulf Gas Co.'s No. 3 Cummings ..... Drlg. gumbo 2,409 ft.
Houston Gulf Gas Co.'s No. 3 Morgan Shelley ..... Location.
Houston Gulf Gas Co.'s No. 6 O'Brien ..... Drlg. shale and gumbo 3,298 ft.
Houston Gulf Gas Co.'s No. 9 T. P. Shelly ..... Drlg. shale and boulders 3,023 ft.
Houston Oil Co.'s No. 11 Pratt-Hewitt-Rooke ..... Comp. gas well; sand 3,667-80 ft.
Houston Oil Co.'s No. 1 Rooke Hotel ..... Drlg. 632 ft.
Houston Oil Co.'s No. 1 Tom Heard ..... Rig.
Houston Oil Co.'s No. 1 Carlysle ..... Derrick.
Houston Oil Co.'s No. 2 Rea ..... Coring oil sand 3,673-79 ft.
Independent Oil & Gas Co.'s No. 2 Claude Heard ..... Testing oil sand 3,686-94 ft.
Independent Oil & Gas Co.'s No. 1-B J. F. B. Heard .... Testing oil sand 3,666 ft.
Independent Oil & Gas Co.'s No. 2-B J. F. B. Heard ..... Tubing sanded, making dry gas on casing 3,666 ft.
Independent Oil & Gas Co.'s No. 1 T. P. Shelley ..... Drlg. shale 5,144 ft.
Independent Oil & Gas Co.'s No. 1 Huddleston ..... Location.
Independent Oil & Gas Co.'s No. 1 Mercy Academy .... Derrick.
Independent Oil & Gas Co.'s No. 1 Helen Reilly ..... Derrick.
Independent Oil & Gas Co.'s No. 6 Reilly ..... Drlg. sticky shale 3,280 ft.
Independent Oil & Gas Co.'s No. 2 West ..... To reset screen 3,656-64 ft.
Edwin M. Jones' No. 1-A Leisering ..... Drlg. gumbo 510 ft.
Edwin M. Jones' No. 1-A J. F. B. Heard ..... Location.
Edwin M. Jones' No. 1-A Mitchell ..... Location.
Larco Oil Co.'s No. 2 Strauch ..... Cem. 10-in. casing 430 ft.
Morgan & Morgan's No. 1 Rooke ..... Drlg. hard sand 1,860 ft.
Morgan Oil Corp.'s No. 1 Swift ..... Cem. 6⅝-in. casing at 3,671 ft.; oil sand 3,689-92 ft.
Morgan Oil Corp.'s No. 4 City ..... Oil sand 3,688-92 ft.; cem. 8¼-in. casing 3,685 ft.
Morgan Oil Corp.'s No. 5 City ..... Derrick.
Morgan Oil Corp.'s No. 1 Hornburg ..... Cem. 12½-in. casing 500 ft.
Morgan Oil Corp.'s No. 1 Fox, Block 71 ..... Set screen to test 3,704 ft.
Morgan Oil Corp.'s No. 1 Tom Heard ..... Cem. 12½-in. casing 1,198 ft.
Morgan Oil Corp.'s No. 1, Block 2 ..... Rig.
Oiguer Oil Co.'s No. 3 Ryalls ..... Rig.
Pearson Properties' No. 1 Ryalls ..... Derrick.
Ed Price et al's No. 1 Mission River ..... Drlg. 536 ft.
Refugio Oil Corp.'s No. 1 Wheeler heirs ..... Sand showing oil 3,679 ft.
Rutherford Traylor Oil Co.'s No. 1, Block 92 ..... Comp. flowing 860 bbls. oil; sand 3,677-95 ft.
Rutherford Traylor Oil Co.'s No. 1, Block 77 ..... Oil sand 3,673-81 ft.; cem. 8¼-in. casing 3,676 ft.
Saxet Oil Co.'s No. 1 Cable ..... Drlg. 2,962 ft.
Saxet Oil Co.'s No. 3 Holmes Heard (old well) ..... Sidetracking stuck drill stem; total depth 4,052 ft.
Saxet Oil Co.'s No. 1 Ryals ..... Comp. flowing 775 bbls. 5,455-75 ft.
Saxet Oil Co.'s No. 1 Fox, Blk. 95 ..... Location.
Saxet Oil Co.'s No. 1 Powers, Blk. 3 ..... Location.
Saxet Oil Co.'s No. 1 Serafino, Blk. 5 ..... Location.
Sun Oil Co.'s No. 3 Buckley, Lot 5, Blk. 2 ..... Derrick.
The Texas Company's No. 1 Shelton ..... Drlg. 3,476 ft.
Union Prod. Co.'s No. 2 O'Brien ..... Oil sand 5,580 ft.
Mission Drlg. Co.'s No. 1 Moss ..... Rig.
Union Prod. Co.'s No. 1 Tom Heard, Block 3 ..... Rig.
Union Prod. Co.'s No. 1 Ben Shelton ..... Oil sand 5,497-5,503 ft.; testing.
Union Prod. Co.'s No. 2 J. F. B. Heard ..... Drlg. sand 1,367 ft.

SOUTH LOUISIANA FIELDS

LOCKPORT—CALCASIEU PARISH

Vacuum Oil Co. & Gulf Refining Co.'s No. 25 Miller .... Drlg. gumbo 2,875 ft.
Vacuum Oil Co. and Gulf Refining Co.'s No. 26 Miller .... Location.
Vacuum Oil Co. & Gulf Refining Co.'s No. 8 Bordages ... Tested salt water 3,843 ft.; to deepen.

HACKBERRY—CAMERON PARISH

Calcasieu Oil Co.'s No. 7 Lempke ..... Location.
Calcasieu Oil Co.'s No. 5 Caldwell ..... Location.
Sunshine Oil Co.'s No. 6 Ellender ..... Derrick.
Rex Petroleum Corp.'s No. 1 Duhon ..... Bailed dry; standing.
Star Petroleum Co.'s No. 1 Lacey ..... Standing 1,867 ft.
The Texas Company's No. 6 State, Calcasieu Lake ..... Derrick.

JENNINGS—ACADIA PARISH

Cline, Smith & Cline's No. 9 Conklin ..... No report.
The Texas Company's No. 5 Rayne heirs (King tract) .... Drlg. rock 6,405 ft.
Yount Lee Oil Co.'s No. 5 Crowley, Sec. 48-9s-3w ..... Abandoned in cap rock 4,537 ft.
Yount Lee Oil Co.'s No. 1 E. F. Simms (northwest side).. Drlg. shale 7,150 ft.
Yount Lee Oil Co.'s No. 8 Houssiere-Latrielle, Section 47-9s-2w ..... Drlg. shale and lime 3,006 ft.

EDGERLY—CALCASIEU PARISH

Drysdale-Savoy Oil Co.'s No. 2 Hill (workover) ..... Rigging up to pump 3,164 ft.
Rex Petroleum Co.'s No. 1 Hunter ..... Rig.
Strange Oil Co.'s No. 1 Reed ..... No report.
Strange Oil Co.'s No. 1 Koonce ..... Drlg. 3,712 ft.

VINTON—CALCASIEU PARISH

Gulf Refining Co.'s No. 49 Star-Vincent ..... No report.
Marrs McLean's No. 4 Gray (workover) ..... Shut down 1,806 ft.
Vinton Petroleum Co.'s No. 5 Matilda Gray ..... Fishing 2,692 ft.
Vinton Petroleum Co.'s No. 6 Matilda Gray ..... Location.
Wilson Broach's No. 1 Vinton ..... Testing oil sand 3,365 ft.

BAYOU BOUILLON—ST. MARTIN PARISH

Rycade Oil Corp.'s No. 9 Bouillon fee ..... Set surface casing.
Rycade Oil Corp.'s No. 5 Atchafalaya fee ..... Coring sand 2,243 ft.

STARKS—CALCASIEU PARISH

J. O. Davis' No. 1 Industrial ..... Fishing 3,744 ft.
Gulf Refining Co.'s No. 19 Lutcher-Moore ..... Comp. flowing 250 bbls. oil 1,159 ft.

SWEET LAKE—CAMERON PARISH

Pure Oil Co.'s No. 8 Yount Lee (workover) ..... Drlg. hard sand and shale 4,845 ft.
Pure Oil Co.'s No. 9 Yount Lee ..... Fishing drill pipe 3,215 ft.

ANSE LA BUTTE—ST. MARTIN PARISH

Yount Lee Oil Co.'s No. 1 Hebert ..... Drlg. hard sand 3,536 ft.

SORRENTO—ASCENSION PARISH

Gulf Refining Co.'s No. 17 United Land Co. ..... Drlg. 2,706 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Black Oil Co.'s No. 1 Lancashire, near Sealey ..... Drlg. gumbo 1,962 ft.
O'Hara et al's No. 1 Batla, near Raccoon City ..... Drlg. shale 2,901 ft.
McInnery et al's No. 1 McDay, west of Kinney ..... Shut down 328 ft.

BRAZORIA COUNTY

Mills Bennett Production Co.'s No. 1 Allen, Allen Dome.. Total depth 4,900 ft.; drilled plug to test 45-ft. oil sand.
Faust et al's No. 5 Faust ..... Drlg. shale 3,400 ft.
Rucks & Patterson's No. 1 Hunter, southwest of Hoskins.. Drlg. gumbo 260 ft.
Shell Petroleum Corp.'s No. 1 Blakely-Winston, Danbury ..... Drlg. gummy shale 3,724 ft.
Steel & Strickland's No. 1 Lockridge ..... Rig.
Word Drlg. Co.'s No. 1 Proctor, west of Hoskins Mound.. Rig.

CHAMBERS COUNTY

Shell Petroleum Corp.'s No. 1 Herff, Moss Bluff ..... Location.

FORT BEND COUNTY

Gulf Production Co.'s No. 1 Brazos Valley, Clodine ..... Drlg. gumbo and lime 2,718 ft.
Pure Oil Co.'s No. 1 Jackson Brown, Barrett and Harris Sur. ..... Rig.

GRIMES COUNTY

Cranfill & Reynolds Oil Co.'s No. 1 Baylor, southeast Navasota ..... Rig.

HARRIS COUNTY

Baldwin and associates' No. 1 Kitzman, Cypress ..... Shut down 4,055 ft.
Buffalo Oil Co.'s No. 1 Beall, Eureka ..... Drlg. gumbo 3,160 ft.
A. F. Belunek's No. 1 Thompson ..... Rig.
Cranfill & Reynolds' No. 1 Brown ..... Drlg. water sand 5,352 ft.
Higgins Oil & Fuel Co.'s No. 1 Sladous, Mykawa ..... Drlg. shale and lime 4,905 ft.
Humble Oil & Refg. Co.'s No. 7 Warren, Hockley ..... Cem. 13⅜-in. casing 1,872 ft.
Humble Oil & Refg. Co.'s No. 2 Minnetex ..... Standing with casing cem. 1,177 ft.
Humble Oil & Refg. Co.'s No. 1 Sladous (workover) .... Drlg. sandy shale 4,623 ft.
Humble Oil & Refg. Co.'s No. 2 Woodburn ..... Drlg. sand and shale 4,361 ft.
Rich et al's No. 1 Highlands ..... Derrick.
Watts Brothers' No. 1 Hubert, Mykawa ..... Sand shale showing oil 4,725 ft.; cem. 6⅝-in. casing 4,534 ft.

JEFFERSON COUNTY

Gulf Production Co.'s No. 8 Bordages ..... Total depth 5,592 ft.; sidetracking stuck drill stem.
Gulf Production Co.'s No. 1-A Guy Junker, Fannett .... Drlg. hard lime and shale 4,917 ft.
Gulf Production Co.'s No. 1-A Thomas, Fannett ..... Drlg. 479 ft.
Gulf Production Co.'s No. 13 Thomas, Fannett ..... Location.
River Oil Corp.'s No. 1 Ship Channel, Brown Survey .... No report.
Rosedale Oil Co.'s No. 1 Walker ..... Standing after testing salt water 1,649 ft.
Stilwell Oil Co.'s No. 1 Brinkman ..... Washing to bottom 3,087 ft.
The Texas Company's No. 2 Pipkin, Big Hill ..... Washing 6,008 ft.
The Texas Company's No. 1 Fitzhugh, Big Hill ..... Washing 5,697 ft.
Westbury Oil Co.'s No. 1 West, Choate Survey ..... Drlg. gumbo 1,902 ft.

LIBERTY COUNTY

Campbell et al's No. 1 fee ..... Rig.
Gulf Production Co.'s No. 1 Weiser ..... Drlg. shale and lime 5,678 ft.
Gulf Production Co.'s No. 3 Boyt, Hankamer ..... Drlg. sand 4,410 ft.

Humble Oil & Refg. Co.'s No. 6 Sterling, Moss Bluff ....Shut in producer.
Cranfill & Reynolds Co.'s No. 4-A Esperson, Sheeks .....Coring sand 2,820 ft.
Cranfill & Reynolds Co.'s No. 5-A Esperson, Sheeks .....Comp. flowing 312 bbls. oil 2,315 ft.
Cranfill & Reynolds Co.'s No. 6-A Esperson, Sheeks .....Drlg. sand 2,131 ft.
Cranfill & Reynolds' No. 2 Davis, Sheeks .....Derrick.
Yount Lee Oil Co.'s No. 2 Moores Bluff, Sheeks .....Drlg. shale and shell 5,958 ft.

MATAGORDA COUNTY

Cockburn et al's No. 1 Hawkins, Shepherds, Mott .....Drlg. rock 2,510 ft.

ORANGE COUNTY

Gulf Production Co.'s No. 1 J. H. Starks, Port Neches ...Drlg. lime rock 5,801 ft.
Gulf Production Co.'s No. 1 M. H. Starks, Port Neches ...Location.
The Texas Company's No. 2 Polk, Port Neches .....Drlg. sticky shale 2,550 ft.
Veteran Oil Co.'s No. 1 Reed, A. Nelson Sur. .....Drlg. sand and shale 4,408 ft.

WALLER COUNTY

Kirby Petroleum Co.'s No. 1 Davis, San Felipe .....Shut down 210 ft.
W. P. Morris' No. 1 Chapman, Donoho Sur. .....Shut down 1,867 ft.

SOUTH LOUISIANA
ASCENSION PARISH

Triumph Oil Corp.'s No. 2 Lacey, Sec. 20-10s-4e .....No report.

ASSUMPTION PARISH

Gulf Refining Co.'s No. 1 Armitese, Napoleonville ....Drlg. hard sand 2,424 ft.
Poor Boys Drilling Co.'s No. 1 LeBarre, Sec. 47-12s-13e ...Derrick.

CALCASIEU PARISH

Wilfred Lahay's No. 2 James .....No report.

CAMERON PARISH

Shell Petroleum Corp.'s No. 12 Watkins, Black Bayou ...Comp. flowing 500 bbls. oil 5,234 ft.; flow increased to 697 bbls.; 26.1 gravity.
Shell Pet. Corp.'s No. 1 Marceaux, Mallard Bay, Sec. 32-12s-3w .....Drlg. shale and sand 7,015 ft.
The Texas Company's No. 5 Calcasieu Lake, Calcasieu Lake Dome .....Building derrick.
Vacuum Oil Co.'s No. 1 Cameron Meadows, Sec. 21-14s-13w .....Rigging up.

IBERIA PARISH

The Texas Company's No. 4 Vermillion Bay .....Drlg. rock 5,497 ft.

IBERVILLE PARISH

Shell Petroleum Corp.'s No. 4 Wilbert, White Castle ....Spudded and set 20-in. pipe 59 ft.
Standard Oil Co.'s No. 4 Schwing, Bayou Blue.....Rigging up.
Standard Oil Co.'s No. 3 Schwing, Bayou Blue .....To test oil sand 2,113-17 ft.
Standard Oil Co.'s No. 5 Wilbert, Bayou Blue .....Derrick.
Standard Oil Co.'s No. 6 Wilbert, Bayou Blue .....Building derrick.
Standard Oil Co.'s No. 1 Case, Bayou Des Glaise .....Rig.

JEFFERSON DAVIS PARISH

Pure Oil Co.'s No. 1 May, Sec. 1-10s-5w .....13⅜-in. casing cemented 1,005 ft.; drilled plug and drlg soft, sandy shale 1,393 ft.
Yount Lee Oil Co.'s No. 1 Courtney, Welsh .....Rig.

LA FOURCHE PARISH

Gulf Refining Co.'s No. 25 Stark, Thibodaux .....Set casing 3,290 ft.
Gulf Refg. Co.'s No. 1 City of New Orleans, Bay Champagne .....Drlg. 3,710 ft.

PLAQUEMINE PARISH

Humble Oil & Refg. Co.'s No. 1 Cockrell-Moran, Lake Grand Ecaille .....Standing 1,533 ft.
Humble Oil & Refining Co.'s No. 1 Lake Washington, Lake Grand Ecaille .....Shut down for water 4,260 ft.
The Texas Company's No. 3 Garden Island Bay .....No report.

ST. LANDRY PARISH

Elbof Exploration Co.'s No. 1 Ledoux, Eunice.....No report.
Herbert-Baker Oil Co.'s No. 1 Fisher, Section 10-3S-4e...No report.
Gulf Refining Co.'s No. 1 Ovide Lahaye, Port Barre .....Drlg. 2,361 ft.
The Texas Company's No. 4 Botney Bay, Port Barre .....Drlg. lime 2,836 ft.
The Texas Company's No. 5 Botney Bay, Port Barre .....Location.
The Texas Company's No. 6 Botney Bay, Port Barre .....Location.

ST. MARTIN PARISH

The Texas Company's No. 1 fee, Hager Dome .....No report.
The Texas Company's No. 3 fee, Hager .....Location.
The Texas Company's No. 2 St. Martin, Hager .....Losing returns 4,723 ft.
The Texas Company's No. 4 fee, Hager .....Location.
The Texas Company's No. 1 Iberville, Hager .....No report.
The Texas Company's No. 2 Iberville, Hager .....Location.
The Texas Company's No. 3 Iberville, Hager .....Location.

ST. MARY PARISH

Louisiana Land & Exloration Co.'s No. 2 Clark, Berwick..No report.
Pure Oil Co.'s No. 1 Wax Lake, Sec. 12-17s-9e .....Moving in material.
Vacuum Oil Co.'s No. 1 Zenor, Patterson .....Drlg. water sand 776 ft.

TERREBONNE PARISH

Charles Paggi's No. 2 Evergreen, Sec. 145-15s-16e .....Rig.
The Texas Company's No. 4 State-Bay St. Elaine .....Derrick.
The Texas Company's No. 2 La. L. & E. Co., Dog Lake..Drlg. water sand 5,383 ft.
The Texas Company's No. 1 State—Bay Junop.....Total depth 5,099 ft. in cap rock; plugged to 2,600 ft. and tested dry; abandoned.
The Texas Company's No. 3 State—Lake Pelto..... Drlg. water sand 3,820 ft.
The Texas Company's No. 2 State—Caillou Island.. ... Stopped flowing; working over 3,243 ft.
The Texas Company's No. 1 State—Lake Barre ..... Rig.
The Texas Company's No. 4 State, Lake Barre ..... Location.
The Texas Company's No. 3 L. L. & E. Co., Four Isle ... Location.

SOUTHWEST TEXAS

(Continued from Page 46)

vey, total depth 2,140 feet, flowed 250 bbls.

Cole Pool—Duval County

J. C. Mackay's No. 3 Dinn, Survey 454, 660 feet W line, 660 feet N line of NW SW, total depth 1,788 feet, 35,000,000 feet of gas, 420 pounds rock pressure.

Magnolia Petroleum Co.'s No. 2 King-Benavides, Block 12, Survey 694, 450 feet N line, 150 feet W line, total depth 2,310 feet, set 8¼-inch casing at 2,295 feet, sand at 2,295-2,310 feet, 20,000,000 feet of gas, 450 pounds rock pressure.

Magnolia-Cole Pool—Webb County

O. W. Killam's No. 16 Bruni, Block 45, Survey 8, Mariano Arispe grant, 328 feet NE line, 300 feet N line of survey, total depth 2,280 feet, 35,000,000 feet gas, 710 pounds rock pressure.

Jennings Pool—Zapata County

Allied Gas Co.'s (Humble) No. 1, F. G. Martinez Survey, 6,500 feet SW line, 500 feet N line of SW of survey, total deth 1,772 feet, 35,000,000 feet gas, 660 pounds rock pressure.

ABANDONED TESTS

Alworth Pool—Jim Hogg County

Charles B. Stevens' No. 2 M. Garza, Block 12, Survey 40, 850 feet NW line, 150 feet NE line, total depth 1,042 feet, abandoned.

Charco Redondo Pool—Zapata County

W. R. Duke's (Duke & Evangeline) No. 2 "B" Martinez, Block 17, W. R. Duke Subdivision, Charco Redondo grant, total depth 1,025 feet, abandoned, sand at 972-82 feet, gas sand 990-97 feet, salt water.

Jennings Pool—Zapata County

R. F. Blankenship's No. 1 Garza, Block 13, Survey 413, 160 feet N and E lines, total depth 1,706 feet, abandoned.

NEW LOCATIONS

Kohler Pool—Duval County

Everett Suladie's No. 1 Peters, 165 feet S line, 230 feet W line, Survey 33, rigging up.

Roma Pool—Starr County

The Texas Company's No. 1 "B" V. C. de Guerra, 150 feet S line, 150 feet W line of N 1,173 acres, Share 92, Porcion 68 of Partition Porcion 67, 68, 69, 70, 71, 72, Jurisdiction of Mier, rigging up.

Cole Pool—Webb County

W. E. May's No. 1 Volpe, 660 feet E line, 840 feet S line, Block 15, Survey 694, rigging up.

Jennings Pool—Zapata County

O. W. Killam's No. 2 F. G. Martinez, 543 feet W line, 150 feet S line of SE, Survey 2, derrick.

Darst Creek—Guadalupe County

Gulf Production Co.'s No. 1 Knoblock in the J. R. Robinson Survey, rigging up.

Humble Oil & Refining Co.'s No. 8-A Denman in the A. S. Emmett Survey, rigging up. Same company's No. 1 Tadlock, total depth 1,200 feet, in shale.

Magnolia Petroleum Co.'s No. 2 Annie Knodel, 150 feet each way out of NW cor. of the J. R. Robinson Survey, rigging up.

Sun Oil Co.'s No. 3 Knoblock, rigging up. Same company's No. 4 Knoblock, derrick.

The Texas Company's No. 4 L. Anderson, 150 feet to S and E lines of tract in the Jacob C. Darst Survey, total depth 2,195 feet, in marl. Same company's No. 1-A Knoblock, 450 feet from NE line, 150 feet from SE line of A lease, location. Same company's No. 1-B Knoblock, 150 feet from SE line, 450 feet SW line of B lease, building derrick. Same company's No. 2-B Knoblock, 450 feet from NE line, 150 feet from NW line of B lease, moving in. Same company's No. 3-B Knoblock, moving in. Same company's No. 2 Posey-Baker, 450 feet NE line, 150 feet NW line of lease, location.

DRILLING ACTIVITY

Dobrowolski Pool—Bexar County

Pen-Tex Oil Co.'s No. 1 Dobrowolski, 150 feet from S line, 150 feet from E line of W 67 acres of Dobrowolski 147-acre tract in the M. Manchaca Survey, spudded in.

Buchanan Pool—Caldwell County

Buchanan-Danciger's No. 1 W. T. Cude, 150 feet each way out of SE cor. of 23-acre W. T. Cude lease, location.

Pettus Field—Bee County

Mission Drilling Co.'s No. 6 Ray, 1,200 feet E of No. 2, total depth 4,025 feet, drilling in shale and sand.

Empire Gas & Fuel Co.'s No. 3 Dowdy, 950 feet south-north line, 150 feet east-west line A. E. Dowdy 40-acre tract, east offset to The Texas Company's No. 1 A. E. Dowdy; total depth 2,598 feet; set casing.

Gulf Production Co.'s No. 2 Thomas Dix, 473 feet southwest line, 150 feet southeast line of tract in the J. R. Robinson Survey; rigging up. Same company's No. 2 Dix-McKean, 850 feet from No. 1 offset United North & South Development Co.'s No. 1 Dix-McKean in the J. R. Robinson Survey; total depth 2,190 feet; drilling in chalk. Same company's No. 3 Dix-McKean, 900 feet northeast and 2,150 feet from northwest line of tract in the J. R. Robinson Survey; building derrick. Same company's No. 4 Dix-McKean, 450 feet northeast line, 150 feet southeast line of tract in the J. R. Robinson Survey; rigging up. Same company's No. 1 Posey-Baker, 500 feet southwest line, 150 feet southeast line of 71-acre tract in the J. R. Robinson Survey; total depth 2,230 feet; drilling in shale. Same company's No. 2 Posey-Baker, 1,150 feet southwest line, 150 feet northwest line of tract in the J. R. Robinson Survey; total depth 2,275 feet; drilling in chalk. Same company's No. 3 Posey-Baker, 150 feet each way northeast corner of tract in the J. R. Robinson Survey; total depth 500 feet; drilling.

Humble Oil & Refining Co.'s No. 1 Baker in the J. C. Darst Survey, 150 feet north line, 183 feet west line of tract; location. Same company's No. 2 Baker in the J. C. Darst Survey, 472 feet north line, 183 feet east line of tract; location. Same company's No. 4-A Denman, 600 feet from No. 3-A Denman and in line with it; total depth 2,250 feet; drilling in chalk. Same company's No. 6-A Denman, 430 feet east from No. 5, 150 feet from south line of lease in the A. S. Emmett Survey; total depth 2,150 feet; drilling in Taylor marl. Same company's No. 7-A Denman, 1,050 feet southeast of No. 4 Denman in the A. S. Emmett Survey; total depth 2,560 feet; set casing. Same company's No. 1 Dowdy, 150 feet each way from southeast corner of 62-acre tract in the Jacob Darst Survey; total depth 2,570 feet; set casing. Same company's No. 1 Sally Wilson in the J. C. Darst Survey, 150 feet from north line, 183 feet from west line; location. Same company's No. 1 Yates Wilson in the J. C. Darst Survey, 150 feet from north line and west line of tract; location.

Magnolia Petroleum Co.'s No. 4 Dix, 1,330 feet from northeast, 150 feet from southeast line of lease and farm in the J. R. Robinson Survey; total depth 2,422 feet; drilling in Buda lime. Same company's No. 6 Dix, 473 feet from southwest line, 150 feet from northeast line of tract, offset to Gulf's No. 2 Thomas Dix in the J. R. Robinson Survey; derrick up. Same company's No. 1 L. V. Echols in the James Hodges Survey, 150 feet to northwest and southwest lines of farm, 3,650 feet to southwest, 3,220 feet to northwest of survey; total depth 2,506 feet; drilling in lime. Same company's No. 2 L. V. Echols in the James Hodges Survey, 150 feet to southwest and southeast lines of lease, 300 feet southeast of No. 1 well, 164½-acre tract; total depth 1,850 feet; drilling in chalk. Same company's No. 1 H. G. Goldman, 1,275 feet from northeast line, 150 feet from northwest line of farm in the J. B. Alexander Survey; total depth 2,412 feet; drilling in chalk. Same company's No. 2 Rand Miller, 450 feet from northeast line, 150 feet from northwest line of tract in the J. R. Alexander Survey; rigging up. Same company's No. 1 S. M. Roamel, 150 feet each way from southeast cor. of 40-acre tract in the James Hodges Survey; total depth 2,540 feet; drilling. Same company's No. 2 S. M. Roamel, 150 feet each way from northeast corner of 40-acre tract in the James Hodges Survey; location. Same company's No. 3 S. M. Roamel, 300 feet south of No. 2 well, 300 feet from northwest line in the James Hodges Survey; total depth 804 feet; drilling.

Simms Oil Co.'s No. 3 C. W. Manford, 300 feet southwest of No. 1, 225 feet from southeast line; location.

Stroubie & Stroubie's No. 2 Rand Miller, 150 feet from No. 1 in the J. B. Alexander Survey; location. Stroubie & Stroubie's No. 3 Rand Miller, 150 feet south of No. 2 in the J. B. Alexander Survey, location. Stroubie & Stroubie's No. 4 Rand Miller, 150 feet south of No. 3 in the J. B. Alexander Survey; location.

Sun Oil Co.'s No. 1 Knoblock in the Joel R. Robinson Survey, 150 feet each way out of the south corner of Chris Knoblock 150 acres in southwest part of survey; total depth 2,585 feet; swabbed 560 bbls. per day; flow 15 bbls. per hour; rigging up to deepen. Same company's No. 2 Knoblock, 1,388 feet from southwest line, 150 feet from southeast line of Knoblock 75-acre lease in the J. R. Robinson Survey; total depth 2,420 feet; drilling in Buda limestone.

The Texas Company's No. 2 L. Anderson in the Jacob Darst Survey, 150 feet to north and east lines; total depth 685 feet; shut down. Same company's No. 3 Dallas Wilson in the J. C. Darst Survey, 150 feet north of CSL; location. Same company's No. 5 Dallas Wilson, 150 feet from north and east lines of the Dallas Wilson tract in the Jacob C. Darst Survey; total depth 1,900 feet; drilling in shale. Same company's No. 1 A. E. Dowdy, 150 feet north, 150 feet east line of lease in the J. C. Darst Survey; total depth 1,950 feet; drilling shale. Same company's No. 1 S. M. Roamel, 150 feet northeast, 150 feet northwest line of 100-acre lease; total depth 2,400 feet; drilling in lime rock. Same company's No. 2 Henry Willie, 150 feet north, 750 feet west of tract, offset to No. 5-A Denman; total depth 2,500 feet; drilling in lime rock. Same company's No. 3 Henry Willie, 1,150 feet east-west line, 150 feet south-north line of tract in the Jacob Darst Survey; total depth 800 feet; drilling in sand and shale. Same company's No. 1 Parrish, 150 feet from south and west lines of Parrish tract in the Jacob C. Darst Survey; total depth 2,400 feet; drilling in lime rock.

Trinity Drillers' No. 1-B Miller, 150 feet each way out of the NW cor. of 23.5-acre tract in the G. B. Alexander Survey; total depth 800 feet; drilling in shale.

United North & South Development Co.'s No. 1-B Dix-McKean, 150 feet out of the south corner of 20-acre tract in the J. R. Robinson Survey; building der-

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rick. Same company's No. 2-A Dix-McKean, 150 feet from southeast and northeast lines Lease "A", 81-acre tract in the J. R. Robinson Survey; building derrick. Same company's No. 3 P. Roamel in the J. R. Robinson Survey; rigging up rotary.

Lasater Field—Brooks County

Houston Oil Co. of Texas' No. 1 Holbein-Wormser in the Palo Blaco de Maguellas Survey, 330 feet N line, 6,540 feet E line, direct offset 660 feet S of No. 1 Lasater, total depth 4,150 feet, set 8¼-inch casing at 4,140 feet, waiting on cement.

Cartwright Pool—Live Oak County

Houston Oil Co.'s No. 2 J. B. Dunning in the M. B. Kilvin Survey, 1,445 feet N of No. 1, total depth 4,290 feet, drilling in shale.

Saxet Field—Nueces County

Saxet Gas Co.'s No. 5 Dunn, 750 feet NE of SW lines of Dunn tract and 1,500 feet SW of No. 1 Dunn or (Saxet) discovery well of field, total depth 3,385 feet, tested sand showing gas at 3,344-48 feet, showing oil at 3,380-85 feet, setting casing to test.

Nursery Field—Victoria County

Humble Oil & Refining Co.'s No. 3-A Jay J. Welder in the D.L.&C. Survey, 1,634 feet SE lines, 736 feet SW lines, 1½ miles NE from Nursery, total depth 5,600 feet, failed to land casing, making new hole 90 feet off bottom.

Cole Pool—Duval County

Magnolia Petroleum Co.'s No. 1 Brennan-Benavides, 300 feet NE line, 300 feet SE line, Block 486, Mariano Arispe grant, Myrtle E. Hale Subdivision, total depth 2,770 feet, sand at 2,765-70 feet, spray oil, drill stem had 10 joints oil 30.8 gravity, set 5⅜-inch casing at 2,765 feet, to bail.

Kohler Pool—Duval County

Allied Gas Co.'s No. 1 Peters, 660 feet N line, 660 feet W line, Survey 161, rigging up.

Humble Oil & Refining Co.'s No. 40 Kohler, 330 feet S line, 495 feet E line, Survey 172, total depth 1,745 feet, set 6⅝-inch casing at 1,741 feet, sand at 1,741-45 feet, waiting on cement. Same company's No. 41 Kohler, 2,970 feet S line, 330 feet E line, Survey 165, location. Same company's No. 42 Kohler, 330 feet S line, 495 feet E line, Survey 172, rigging up.

Simms Oil Co.'s No. 8 Dinn, 660 feet S line, 660 feet E line of SW of SE, Survey 143, total depth 150 feet, drilling, set 10-inch casing at 62 feet.

Schoolfield-O'Byrne—Duval County

C. E. Long's (Shell) No. 5 Hahl, 150 feet N line, 630 feet E line, Block 26, Survey 250, location.

Randado Pool—Jim Hogg County

Randado Oil Corp.'s No. 35 Palacious, Block 2, Survey 291, 150 feet S line, 450 feet E line, total depth 100 feet, standing.

Magnolia Petroleum Co.'s No. 1 Weil, Block 2, Survey 5, 660 feet N line, 349 feet E line, total depth 2,560 feet, drilling.

Henne-Winch-Fariss—Jim Hogg County

George S. Marshall's No. 4 Holbien, Share 3, Block 10, Survey 11, 150 feet S and W lines, derrick up.

George S. Marshall's No. 5 Holbien, Share 3, Block 10, Survey 15, 150 feet N and W lines, rigging up.

Carolina-Texas Pool—Webb County

Foster Barnsley's No. 7 Webster, Survey 684, 750 feet E line, 510 feet S line of NE of SW of survey, total depth 2,612 feet, set 6⅝-inch casing at 2,608 feet, sand at 2,608-12 feet, waiting on cement.

W. R. Shankle's No. 2 Webster, Survey 684, 1,170 feet W line, 150 feet S line, rigging up.

Magnolia-Cole Pool—Webb County

Magnolia Petroleum Co.'s No. 4 Brennan-Benavides in the Mariano Arispe grant, corner Blocks 16, 17, 52, 53, Myrtle E. Hale Subdivision, total depth 2,770 feet, coring.

O. W. Killam's No. 17 Bruni, 458 feet SW line, 328 feet NE line, Block 35, Adams Subdivision, Survey 8, total depth 800 feet, drilling.

Cole Pool—Webb County

Allied Gas Co.'s No. 1 Bruni, 200 feet SW line, 450 feet NW line, Survey 7, rigging up.

Magnolia Petroleum Co.'s No. 1 S. Perez, total depth 4,600 feet, drilling. Same company's No. 2 King-Harper, Block 2, Survey 323, 660 feet N and E lines, location.

Jennings Pool—Zapata County

O. W. Killam's No. 17 Cuellar, 600 feet N line, 940 feet E line, Cerrito Blanco grant, derrick. O. W. Killam's No. 19 Cuellar, 150 feet NE line, 2,876 feet NW line, Cerrito Blanco grant, total depth 1,520 feet, drilling.

R. F. Blankenship's No. 2 Garza, Block 2, Survey 413, 425 feet W line, 425 feet N line, ready to spud, laying water line.

Blair & Acklin's No. 2 Trevino, Block 2, Survey 66, 150 feet W line, 200 feet N line, total depth 1,254 feet, backed off 2 joints of casing in hole, fishing (hole cleared).

Darst Creek—Guadalupe County

Cranfill-Reynolds' No. 1 R. C. Appling, 3,600 feet SW line, 2,700 feet NW line of survey on 11-acre tract in the Joseph Hodges Survey, total depth 2,550 feet, drilling in hard shale.

CALIFORNIA FIELDS

(Continued from Page 53)

weeks but this delay is only of a temporary nature.

Long Beach

Both the east and west ends of the Long Beach Field have shown increased development during the past several weeks and additional drilling is scheduled to get under way in both areas as a result of recent favorable completions. The State Co. focused the attention of operators on the southeastern end of the field several months ago when its No. 1 Sievers came in flowing 2,380 bbls. per day from 6,819 feet in July, 1929. The completion of this well stimulated leasing of adjoining acreage and resulted in the subsequent starting of a number of new wells and the deepening of several others producing higher up. The Exeter Oil Co. is building a derrick at Orizaba and Freeman Streets offsetting the State Co.'s producing well and Bryan & Stone and E. E. Combs are following a similar procedure at State and Obispo Streets. Bryan & Stone's new rig, incidentally, will be a 170-foot wooden derrick considerably higher than those in general use. The Petroleo Syndicate, which recently completed its initial producer on the Myer Community Lease near Fifteenth and Terminal Streets is rotating ahead in No. 2 at 5,450 feet and is rigging up No. 3 for an early spud.

The Petroleum Securities is also pursuing an aggressive policy in the southeastern end of the field, and, in addition to having two strings of tools already in operation, has started rig construction for No. 1 Bruner, located on a 10-acre lease recently acquired from the Painted Hills Oil Co. On the Graham lease in this section of the field, the Petroleum Securities has cored approximately 100 feet of oil sand in No. 1 at 6,507 feet. Current production figures credit the Shell Oil Corp. with a total daily production at Long Beach of 23,000 bbls., followed by the Richfield with 9,500 bbls., The Texas Company with 8,000 bbls., Dabney & Johnston with 7,000 bbls., Union with 2,350 bbls. and General Petroleum with 1,200 bbls.

Deep Zone Possibilities

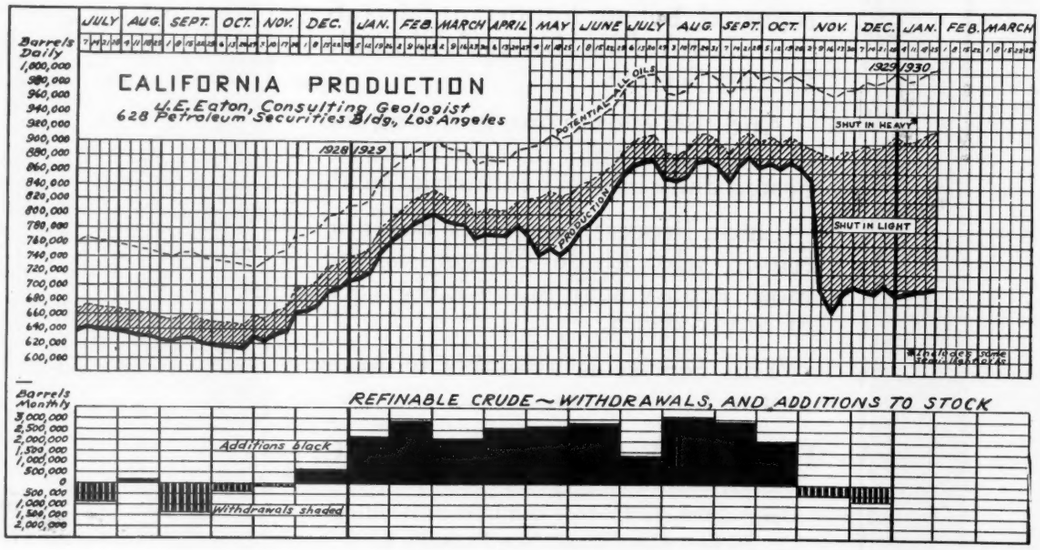
Considerable interest is being manifested in the deep zone possibilities out in the Los Cerritos section in the western end of the field due to the completion of K. G. Pulliam's No. 2 Signal, which came in two weeks ago flowing 1,325 bbls. daily from 7,055 feet. This well is located at Thirty-sixth and American Avenue and the large production recorded was somewhat surprising, although the Vulcan Petroleum's No. 1 Signal in that area came in a week or so previous flowing 355 bbls. per day from 7,009 feet. As a result of this work the Ring Petroleum is making preparations to redrill and deepen No. 1 Johnson from its present depth of approximately 4,500 feet down to the lower zone now being exploited. This well is located just east of American Avenue near Atlantic in the western end of the field now undergoing development. Woods & Callahan are also making preparations to participate in the exploitation campaign under way out in the Los Cerritos section of the field and they will begin deepening operations on two wells in the very near future. They recently acquired Stephens & Hardy's No. 36 and the Barry Oil Association's No. 2 and rotary equipment is now being rigged up. Both of these projects were completed during the original Los Cerritos boom several years ago, the former having been bottomed at 4,842 feet and the latter at 4,824 feet.

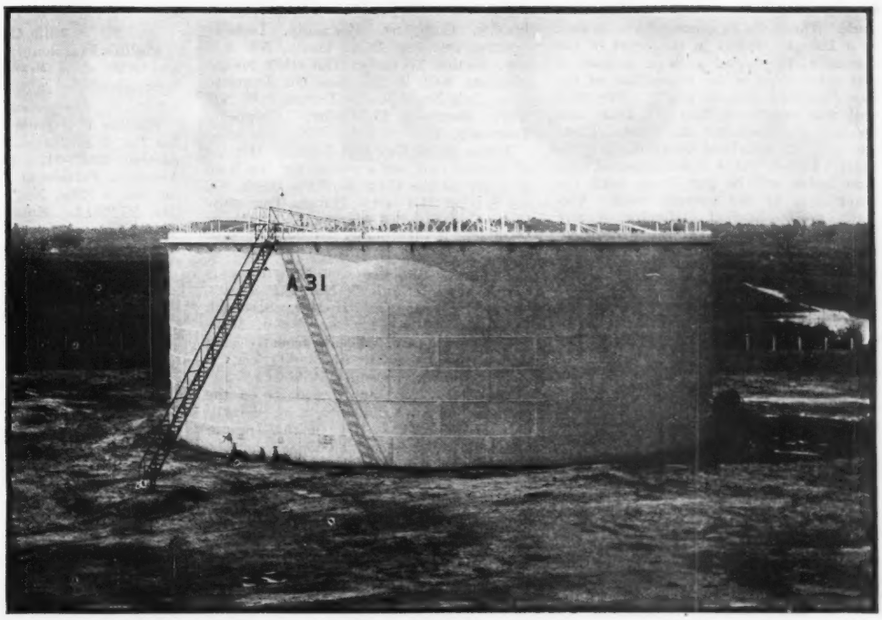
New wells actually spudded in at Long Beach during the past week include No. 10 Municipal of the Jergins Syndicate, the A. H. McFarland Syndicate's No. 2, No. 2 Bixby of the Petroleum Securities, No. 1 Colter of the Rawco Oil Co. and No. 2 Chamberlain of The Texas Company. In addition to these, Brown, Allen & Norwood, Bryan & Stone, Colonial Oil Co., M.G.M. Drilling Co. and the Shell Oil Corp. are building new rigs for additional work. The best well finished at Long Beach during the past week was No. 1 Signal of the Pacific Southwest Royalties Corp., which came in flowing 1,240 bbls. of clean 28.9 gravity oil and 1,100,000 feet of wet gas daily from 6,810 feet, the hole having been finished with a 3-inch oil string cemented through perforations at 6,621 feet. The Sovereign Oil Co.'s No. 3 Linden also showed substantial production upon being returned to production during the week. This well, originally completed flowing 1,500 bbls. per day from 7,743 feet in September, 1928, was recompleted several days ago flowing 1,095 bbls. initially upon recompletion at 8,283 feet. The Texas Company's well No. 4 on Foster Lease No. 2, another recompletion chalked up this week, was returned to producing doing 410 bbls. daily on a compressor. This well was redrilled and deepened to 6,749 feet and finished with a 5¾-inch liner carrying 1,215 feet of perforated. The Richfield Oil Co. recompleted No. 5 Green at 7,703 feet but this project only showed an initial of 150 bbls. daily upon being returned to production. The Delaney Petroleum, under the supervision of A. J. (Art) Delaney, redrilled and deepened No. 9 Cerritos to 7,970 feet and it was returned to production doing 250 bbls. daily.

Playa Del Rey

Operators are marking time in the recently discovered Playa Del Rey Field of Los Angeles Basin pending the lifting of drilling restrictions and the granting of the necessary permits. Once this formality is out of the way, however, we may anticipate a competitive drilling campaign. It is believed that at least 15 tests will be under way in this area within 30 days after restrictions have been lifted. The Los Angeles Planning Commission, which recently approved several permits, is taking its time before submitting its recommendations to the city council for action. It is formulating a definite program to prevent any unnecessary exploitation and is making a concerted attempt to safeguard adjoining projects from being damaged. Operators in the Playa Del Rey Field, when they start operations, will begin work under rigid restrictions as each will be obliged to post a $5,000 bond to insure the restoration of property to its original state in case a dry hole develops. Another condition imposed is that each well must be completed within 75 days after it has been spudded in. This rule was adopted in order to prevent shoestring operators from starting work without sufficient finances to carry a well down to completion. Several protests have been lodged against projected development at Playa Del Rey but none of them has yet been allowed. Two more protests were filed this week by Lewis Stone and Francis Marion, members of the motion picture colony, but the commission, following its established precedent, filed each of them without comment. The Ohio Oil Co.'s discovery well continues to hold up on production with clock-like regularity after being beaned back. Good footage is being made by the Ohio in its second project and preparations are being made to start another well on the Howland property, which is located between the present producer on the gun club property and the first test in this area, which turned out to be a dry hole.

The Richfield Oil Co. of California has just completed a very successful drilling campaign out in the west front section of the Kern River Field. Eighteen con-


CALIFORNIA PRODUCTION
W. E. Eaton, Consulting Geologist
628 Petroleum Securities Bldg., Los Angeles
JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MARCH APRIL MAY JUNE JULY AUG. SEPT. OCT. NOV. DEC. JAN. FEB. MARCH
Barrels Daily
1928/1929
1929/1930
POTENTIAL
PRODUCTION
SHUT IN HEAVY
SHUT IN LIGHT
REFINABLE CRUDE — WITHDRAWALS, AND ADDITIONS TO STOCK
Barrels Monthly
Additions black
Withdrawals shaded



YOU CAN'T BREATHE *through a narrow tube*

THE story is told of a Frenchman who had himself buried alive for publicity purposes . . . expecting to fool the public by breathing through a long tube secretly installed. His plans failed because it is not possible to breath through such a tube.

This incident illustrates how the tall, narrow slot principle used on Wiggins Floating Roofs stops "breathing" (and consequent evaporation loss) in the concentric area between the roof shoes and the tank shell, when rivet heads and joints prevent a perfect contact.

The air in the narrow space is held perfectly still, and a vapor blanket forms just above the oil, preventing additional vapor from rising. Even the movement of the roof caused by filling or emptying will not disturb the vapor blanket and lower the effectiveness of the tall slot.

This combination of the tall, narrow slot seal and a deck riding directly on the oil stops both filling and emptying loss and surface evaporation. On a working tank handling 5,000 bbls. of average Mid-Continent crude, a loss of 1,810 to 2,310 bbls. is practically eliminated. Savings with other gravities and products are in proportion. The roof pays for itself in a short period. Fire hazard is also removed because air is kept out of contact with the oil.

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Dallas	3341 Magnolia Bldg.	Detroit	1514 Lafayette Bldg.
Atlanta	1054 Healy Bldg.	Philadelphia	1615 Jefferson Bldg.
New York	3147 Hudson Terminal	San Francisco	1054 Rialto Bldg.
Cleveland	2204 Union Trust Bldg.	Boston	1517 Consolidated Gas Bldg.
Chicago	2128 Old Colony Bldg.	Havana, Cuba	Apartada 2507

secutive producers have been drilled on Section 22-28-27 since the initiation of work. The wells in question are located on a 160-acre parcel in the heart of the extension, the property being a part of that taken over in the acquisition of the Pan American Petroleum Co. The first well was completed May 19, 1928, and the last on December 22, 1929. There are still 12 undrilled locations on the quarter section but it is not expected that these holes will be put down until the latter part of the current year. Virtually no mechanical difficulty of any kind was experienced in the drilling of these completions, which cost an average of but $25,000 each for holes ranging from 2,200 to 2,800 feet in depth. This compares with an average cost of $35,000 for wells of corresponding depths in the same field. A saving of $10,000 per well, or a total of $180,000, was effected through the use of reconditioned material acquired with the acquisition of the Pan American Co. According to a survey just completed, these wells are pumping approximately 120 bbls. per day each, as compared with an average of 85 bbls. for wells on the east and a 50-bbl. average for offset wells on the south and west. The wells are only on production in order to prevent drainage of this acreage due to the obligation of operators on adjacent leases to produce their wells to meet requirements of demands from the respective lessors.

MICHIGAN FIELDS

(Continued from Page 52)

field. It came in at 1,860-72 feet and was gauged through an 8-inch casing at about 5,000,000 feet.

While the Reed Oil Co.'s No. 2 Edward F. Plunkett, SE SE, Section 8-10-16, Muskegon Township, has not been placed on the pump it is estimated good for 40 bbls. in the lower Traverse at 1,860-70 feet.

Another well attracting considerable attention was the Diamond Oil & Gas Co.'s No. 1 North Muskegon Development Co., cased at 2,134 feet and about ready to drill into the pay sand below the original Dundee pay which it struck at 2,060 feet.

Western Michigan Wildcats

Only four western Michigan wildcat oil wells are drilling in Oceana, Newaygo and Ottawa Counties which adjoin Muskegon County on three sides. The Red Rock Oil & Gas Co.'s No. 1 Skidmore, SW NE, Section 19-15n-18w, Golden Township, Oceana County, near Silver Lake, is driving pipe at about 150 feet deep. It will be a structure test.

C. J. Sipple, contractor, has moved in a rig for the North American Trust Co.'s No. 2 Iroquois Oil Co. well, NE NW, Section 25-13n-17w, Grant Township, near Fruitvale.

The Atlantic Exploration Co.'s No. 1 Brydges, NW SW, Section 12-11n-13w, Ashland Township, is the only one of nine uncompleted wildcats in Newaygo County drilling. It is at about 3,200 feet.

The Michigan Petroleum Co.'s No. 1 C. E. Moe well, SE SE, Section 6-9n-13w, Chester Township, Ottawa County, near Ravenna, is drilling at more than 5,200 feet.

New Permits

Of 16 new permits, 14 are for wells to be drilled within the proven Mount Pleasant Field. One will be a Manistee County wildcat and the other a Clare County wildcat. New Pure company permits are: No. 4 State-Isabella-B, NW NE SE, Section 2-14n-3w, Chippewa Township, Isabella County; Glen M. Reem No. 5, NW NW SE, Section 12-14n-3w; No. 4 State-Isabella-A, SW SW NE, Section 12-14n-3w; No. 1 Jennie Casner, NE SE SE, Section 11-14n-3w; No. 2 B. G. Davis, SE SE SE, Section 2-14n-3w; No. 2 John B. Rayner, SW SW SW, Section 1-14n-3w; No. 3 John B. Rayner-C, SE SW SE, Section 1-14n-3w; No. 2 Iosco Land Co., SW SE SW, Section 1-14n-3w; No. 3 Lewis Thompson, NW NW NW, Section 12-14n-3w; No. 4 Lewis Thompson, NE NW NW, Section 12-14n-3w; and No. 1 E. Elmer Depuy, NW NE SE, Section 13-14n-3w. New Dixie Oil Co. wells will be No. 2 W. H. Choates, SW SW NE, Section 2-14n-3w, Chippewa Township, Isabella County, and No. 3 N. Davis, NE NE SW, Section 2-14n-3w. The other Mount Pleasant well is the Sias Oil Development Co.'s No. 3 Keeler-Brown, NW NE NW, Section 11-14n-3w, Chippewa Township.

James A. McKay and John A. Mercier of Detroit took out a permit for No. 3 on property of the Citizens State Bank, SE SE Section 31-18n-4w, Hatton Township, Clare County. The Mammoth Oil Co. of Michigan is drilling a wildcat in Section 15.

The new Manistee County wildcat is Smith and McCauley's No. 1 Piellusch, NE SE Section 20-31n-16w, Stronach Township. It is near the city of Manistee where several wildcats recently have struck gas in the drift about 600 feet.

Montcalm County Wildcat

The Montcalm County wildcat on the property of A. A. Herrick near the village of Fenwick is dry in the Dundee and will be plugged at 3,065 feet.

Water has been struck in two wildcats, one near Lansing and the other east of Lansing near Howell. The latter will be plugged and the former will be drilled at least another 100 feet. The well nearest Lansing is the Hillmur Oil Co.'s No. 1 Potter, NW NW Section 21-4n-2e, Locke Township, Ingham County, near the village of Williamston. At 2,310 feet a show of oil and gas which flowed several feet above the casing was struck. Salt water followed and the well was drilled to 2,410 feet and cased. At 2,425 feet another flow of water was struck. The well will be drilled to 2,500 feet at least. The company also is considering drilling other tests in the vicinity of Lansing.

The other well is P. A. Meyers and others' No. 1 T. F. Crandall, NW NW Section 14-3n-4e, Howell Township, Livingston County. It struck water at 1,332 feet in the Dundee and will be plugged.

Kalkasha Wildcat

The Muskegon Oil Corp.'s wildcat on a 165,000-acre state lease in Kalkasha County near the northern extremity of the lower peninsula of Michigan is drilling at about 500 feet after landing drive pipe 50 feet higher than was expected at 350 feet. W. A. Hower, field superintendent, and H. D. Crider, geologist for the Muskegon and associated corporations, made a visit to the well.

The Grayling Development Co. also is interested in the well, which is No. 2 State, NW NW Section 16-26n-5w, Clearwater Township, Kalkasha County.

KANSAS FIELDS

(Continued from Page 45)

ler, SW cor. NE, Section 20-26-5, is a rig. The rig is also up for No. 95 Koogler, NW cor. SW NW, Section 20-26-5. Southbrook Oil Co.'s No. 1 Joseph, SE cor. NW SE, Section 25-24-3, made 85 bbls. in sand 2,690-95 feet. Garden and others' No. 5 Sluss "B," NE cor. NW NW, Section 6-27-6, has been completed for 50 bbls. in sand 2,728-68 feet.

Barber County

Barbara Oil Co.'s No. 3 Carter, NE cor. SW SE SE, Section 2-33-13w, has been abandoned at 5,145 feet.

Clay County

Derby Oil Co.'s No. 1 Niemiller, C NW SW, Section 19-10-3, has been abandoned at 3,115 feet.

Chautauqua County

Valentine and others made location for No. 1 Patterson, NW cor. SE SW, Section 2-33-9.

Coffey County

Hinsley and others' rig is up for No. 1 Van Ocker, SW cor. SE NE, Section 12-23-14. Chase County Pipe Line Co.'s No. 1 Miller, C SW, Section 21-19-6, has been completed for 750,000 feet of gas in sand 495-501 feet.

Cowley County

Lewis Production Co. and Gypsy Oil Co.'s No. 1 Fitzgerald, NW cor. NE SW, Section 20-31-6, made 70 bbls. in sand 2,895-2,921 feet. Mid-Kansas Oil & Gas Co.'s No. 2 Harris, C NE NE, Section 20-31-6, has been completed for 16,000,000 feet of gas in sand 2,211-13 feet. Roth & Faurot's No. 1 Stone, SE cor. SW NE, Section 34-32-4, is a dry hole at 3,465 feet.

Ellis County

Phillips Petroleum Co.'s No. 1 Schmeidler, NW cor., Section 20-12-17w, has been abandoned at 3,903 feet.

Greenwood County

Phillips Petroleum Co. has the rig up for No. 2 Patterson, NW cor. SE SW, Section 22-23-11. Dixie Oil Co. and Amerada Petroleum Corp. built the rig for No. 5 Ellis, NE cor. SW NW, Section 27-23-11. Empire Oil & Refining Co.'s rig is up for No. 7 Patterson "C," SW cor. SE SE, Section 36-23-11. Derby Oil Co.'s No. 1 Beavers, NW cor. SW SE, Section 25-24-12, is drilling at 355 feet. Roth & Faurot's rig is up for No. 1 Dame, NW cor. SW NE, Section 30-24-13.

McPherson County

Shell Petroleum Corp. made location for No. 1 Koehn, SE cor. SW SW, Section 36-19-2w. Shell Petroleum Corp. made location for No. 4 Ritz, SE cor. SW SW, Section 1-20-2w, Ritz Pool. No. 4 Stuckey is a location, NE cor. SW SE, Section 9-21-3w, Voshel Pool. Mcpherson Oil & Gas Development Co.'s No. 1 Wallace, C SW, Section 12-19-2w, made 8,600,000 feet of gas in chat 2,914-43 feet. Reynolds and others' No. 1 Koehn, NE cor. SE NE, Section 15-20-3w, is dry and abandoned at 3,500 feet. The Prairie Oil & Gas Co. and T. B. Slick's No. 1 Stuckey, NW cor. SW, Section 10-21-3w, Voshel Pool, made 2,040 bbls. in sand 3,361-64 feet.

Sedgwick County

Bu-Vi-Bar Petroleum Co.'s No. 9 Corr, SW cor. NW SE, Section 1-26-1w, Valley Center Pool, made 777 bbls. first 18 hours in sand 3,349-52 feet.

Rooks County

Central Commercial Oil Co.'s No. 1 Boxa, NE cor. SW SE, Section 22-9-17w, has been abandoned at 3,692 feet.

Rush County

Skelton & Hiatt made location for No. 1 Andres, C NE SW, Section 9-18-18w.

Woodson County

Oko Oil Co.'s rig is up for No. 2 Houghland, SW cor. NE NE, Section 2-24-14.

LA.-ARK. FIELDS

(Continued from Page 49)

to be the favorite hunting ground for wildcatters in Sabine with respect to both Pleasant Hill and Zwolle production.

Not Completed as Producers

Two Richland Parish wells, listed last week as blowouts from a prospective second sand between the 2,450-foot stuff and the gas Hope Producing Co. found at 2,900 feet, were not completed as producers as reported. Southern Carbon Co.'s No. 1 Humble, Section 36-16-6, which blew in unexpectedly with an estimated 50,000,000 feet of gas from 2,507 feet, developed between 7,000 and 10,000 bbls. of salt water and was abandoned. Location is in the far southeast corner of proven territory. And the salt water hasn't stopped arrangements for another hole in the immediate vicinity.

Louisiana Gas & Fuel Co. has location for No. 1 Chapman in the NW SE of Section 36. Palmer Corp.'s No. 1-A Boykin, Section 20-17-6, another blowout, mudded off the estimated 45,000,000 feet of gas and cemented 9-inch at 925 feet and No. 1-A Earle, another blowout, in Section 2-16-5, will set 4½-inch at 2,498 feet. Northern Louisiana Natural Gas Co.'s No. 5 Boykin, in Section 20-17-6, the fourth offset to an old crater well, was a successful completion at 2,400 feet, gauging 40,000,000 feet of gas. Three previous attempts to make a gas well offsetting the crater of No. 1 were failures through gas getting into a shallow water sand. Another detail of this completion is that total depth is about 50 feet less than the average Richland well, surface elevations running with little variation from ont end of the field to the other.

Southern Carbon Co.'s No. 14 Tensas, Section 43-20-4, Ouachita Parish, gauged 10,000,000 feet at 690 pounds, total depth 2,122 feet. Union Gas Products Co.'s No. 1 Hare, a second sand test in Section 22-19-5, Ouachita Parish, was dry at 2,357 feet and is shut down at 2,377 feet. United Carbon Co's No. 2 Puckett, was dry at 2,270 feet, totaled 1,500,000 feet of gas with a spray of salt water at 2,317 feet and is drilling at 2,330 feet.

Second Sand Not Important

From these, and last week's reports on Monroe deep wells, it would appear that the "second sand" does not amount to much up to date. It was thought when Magnolia Petroleum Co. completed a couple of wells at 2,360-80 feet several weeks ago, there might be quite a play for the deeper gas, but it has not developed. There is too much gas in sight.

CANADIAN FIELDS

(Continued from Page 56)

2, LSD 3, same section, west of the discovery, is running 12½-inch casing at 1,300 feet and logging closely with No. 1. Vanalta Oils, Ltd., is arranging to drill a series of 12 tests this spring and summer on the Red Coulee structure, where it holds 1,484 acres, subleased from Alberta Pacafic Consolidated Oils, Ltd., on one-eighth royalty.

Central Turner Valley

In the Central Turner Valley area, McLeod Oil Co.'s No. 3, LSD 16, Section 1-20-3w5, is reported to have blown back into production. The test choked off some time ago when tools were run in an attempt to penetrate a bridge in the deep lime. The bridge broke and the released gas jammed the equipment, including 4,000 feet of drilling line. Further delay was caused by rebuilding the derrick. When the jammed drill line was recovered, a big gas flow, officially measured at 20,5000,000 feet a day, was released. This flow was placed on the separator, but results are not known, though the crude naphtha recovery is estimated around 140 bbls., or double the previous recovery. McLeod's No. 1, same LSD, is also testing production following the bringing back of the gas flow which was bridged off, and may make 50 to 60 bbls. a day or better. McLeod's No. 4, which has been making around 80 bbls. a day from the lower producing horizon in the lime, is reported to show a slight diminution, due apparently to bridging. No. 2, which has dropped to less than 10 bbls. a day, will be cleaned out and deepened.

British Dominion Oil Development Corp.'s No. 2, LSD 6, Section 12-20-3w5, is reported making steady production from the deep lime around 130 bbls. a day, and delivering to the Royalite pipe line. British Dominion's No. 3 will probably be started this spring.

Okalta Oils' No. 1, LSD 1, Section 1-20-3w5, is being rigged up with diamond drill to clean out hole and restore production from the deep lime. The well started last spring at around 500 bbls. a day, but has declined to approximately 200 bbls.

Imperial Tests

Among the Imperial tests, Mayland Oil Co.'s No. 1, LSD 10, Section 17-19-2w5, is at 6,242 feet and fishing for tubing. The latter was being run preparatory to a test of production 801 feet in the lime. Mayland's No. 1 is the deepest active test in the field, and the second deepest hole in the Turner Valley, the depth record being held by British Dominion Oil Development Corp.'s No. 1, abandoned last year at 6,600 feet.

Home Oil Co.'s No. 4, LSD 14, Section 20-19-2w5, is drilling below 5,560 feet, after encountering what is apparently the second gas horizon at 142 feet in the lime, with a wet gas production around 5,500,000 feet a day. The big producing horizon in the other Home wells was around 175 feet in the lime.

Royalite's No. 21, LSD 1, Section 13-20-3w5, drilling about 675 feet in the lime at 4,983 feet, got a pocket of gas which looked like big production. The flow quickly declined, and drilling is continuing at 5,010 feet.

South Turner Valley

In the South Turner Valley, Tom Visser of Okotoks is working on contract

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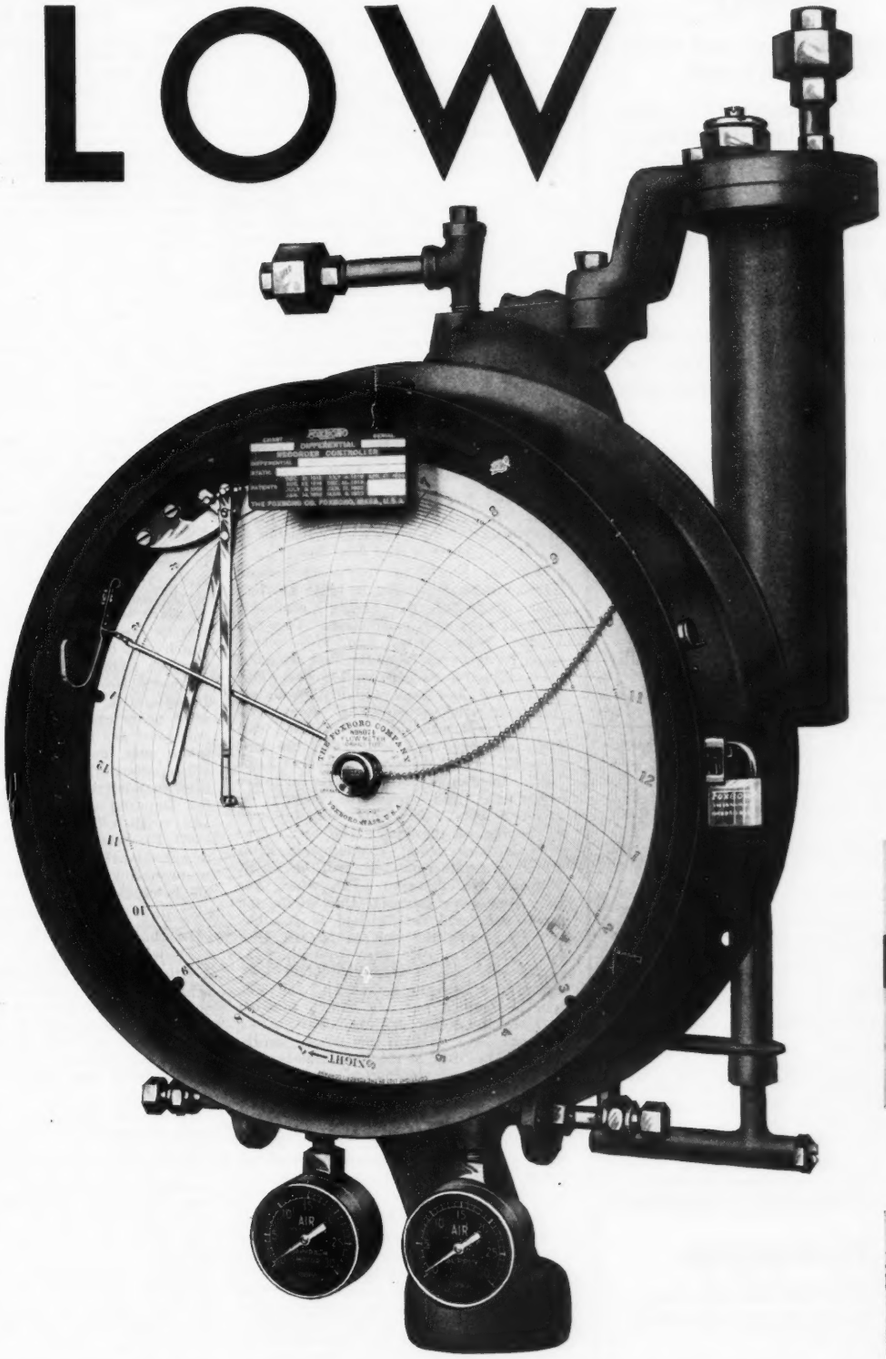

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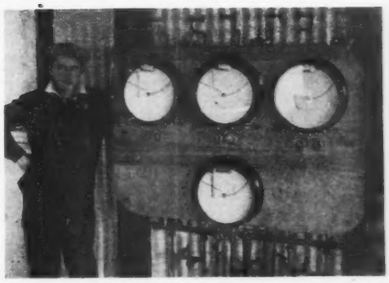
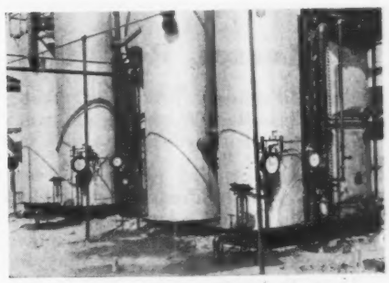


The Pump Control Board in the Pump House of the Gypsy Oil Company's Gasoline Plant, Mission Field, Seminole Area.



A distillation unit at the Little River, Oklahoma, Plant of the Gypsy Oil Company.

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for a new derrick for Wellington Oils' No. 1, LSD 1, Section 20-19-2w5, replacing the derrick burned just after the test commenced drilling in the top of the lime. The hole is down 4,676 feet. It is on the southeast corner of the famous Section 20-19-2w5, south and east some distance from the Home producers, and has got the lime several hundred feet higher. East Crest Oil Co.'s No. 1, LSD 5-6, Section 16-19-2w5,, standing 112 feet in the lime at 4,412 feet depth, has let contract to the Sullivan Diamond Drill Co. to drill 300 feet farther into the lime, unless production is sooner encountered.

Calmont Oils' No. 11, LSD 11, Section 20-19-2w5, has derrick up, and No. 12 has cellar dug. These tests are on the Dallas lease, offsetting the Home and Associated producers to the south, west and north.

Mercury Oils' No. 3, LSD 2, Section 4-19-2w5, is drilling close to the lime at 4,940 feet, after an unsuccessful test of the Dalhousie sand at 4,818 feet. Mercury's No. 2, LSD 12, is working on new derrick to resume at 4,460 feet. Miracle Oils' No. 1, LSD 11, is drilling at 3,875 feet with some gas production. Commonwealth Petroleums' No. 2, LSD 7, Section 9-19-2w5, is having difficulty in testing production from the Dalhousie horizon, owing to sand coming with the oil. Vanberta Oils' No. 2, LSD 5, Section 34-18-2w5, is rigging up. Aerolite Oil Corp.'s No. 1, LSD 4, Section 3-19-2w5, is reported rigging up.

North Turner Valley

In the North Turner Valley, Model Oils' No. 1, LSD 8, Section 22-20-3w5, is drilling in the belemnite formation at 5,750 feet, close to the deep lime.

Further south, in the north central area, Vulcan Oils' No. 1, LSD 11, Section 13-20-3w5, is being gradually brought back into production. This test started some years ago with crude naphtha recovery from the lime at 5,004 feet, estimated as high as 140 bbls. This production has been steadily declining, due to freezing and bridging. Last October the well was shot and drilling carried past the tools lost when the hole blew in. The hole now bottoms at 5,034 feet. In January, 170 quarts of nitro were used, and production brought to about 20 bbls. a day, this being followed by caving of the lower 140 feet. The hole is now being cleaned out after which a production test will be made. Vulcan's No. 2, same LSD, which has been shut down for some time at around 4,800 feet, will be finished if possible. At this depth the hole is in the Dalhousie sands, and, when opened, light crude was found standing 3,500 feet. The 6-inch is being pulled and the hole will be reamed out and 8-inch lowered to facilitate deeper drilling. The cost of carrying No. 2 well to the present depth, within a few feet of the lime, was largely paid for out of production from No. 1.

Foothills Operations

On the Waite Valley structure, Richfield Petroleums' No. 1, Section 35-20-3w5, is reported to have resumed at 3,700 feet after replacing derrick destroyed by fire.

Border Fields

In the Milk River area, east of Coutts, Commonwealth Petroleums' No. 1, LSD 9, Section 9-3-15w4, is at 3,412 feet and shutting off water. The test is now 612 feet in the Madison and thought to be close to the top of the Devonian lime, which will also be tested.

In the Taber district, Cole-English Syndicate's Taber No. 1, LSD 3, Section 11-10-17w4, is at 3,300 feet and drilling with some shows of gas and oil reported. Further north and east, Bugle Oils' No. 1, LSD 12, Section 14-23-11w4, is hauling casing for a test to spud in this spring.

In the Spring Coulee area Alberta Pacific Consolidated Oils, Ltd., of Calgary has started work on its No. 1 test on the Smith & Over property in Section 15-4-23w4, 4½ miles south of Spring Coulee. The acreage is being drilled under an arrangement with the Canadian Exploration Co. of Denver. Under the same arrangement Alberta Pacific Consolidated will spud in a test next spring on the Duvernay structure near Edmonton. Nordon Corp. is reported preparing for a test on the Malmberg farm on the same structure.

In the Shank Lake area near Lethbridge, Multi-Structure Holdings, Ltd., of Calgary has secured acreage and is arranging for a test to be drilled by United States interests on a portion of its holdings near Del Bonita.

Wainwright Field

Cold weather and heavy snowfall resulting in badly drifted roads have interfered materially with operations in east central Alberta. In the Wainwright Field most of the outfits are either definitely shut down or marking time till spring. Onalta Oils' No. 1, LSD 8, Section 20-45-6w4, is drilling around 1,600 feet after running 10-inch casing to 1,580 feet. Drifted snow interfered with hauling the casing and is holding up the moving of fuel oil which is used for drilling. Refining operations at both the Wainwell Oils and Associated Refineries plants have also been handicapped by the freezing of condensation in the conductor services. Wainwell Oils' No. 4, LSD 15, Section 37-44-7w4, has been placed on the pump and is reported making a fair amount of heavy crude, but work on the company's other wells is at a standstill till milder weather.

It is reported that Sasko-Wainwright Oil & Gas Co. is planning extensive development work in the spring. Sasko-Wainwright's No. 1 is in steady production and No. 2, LSD 1, Section 19-45-6w4, has derrick up. Weymarn Petroleums, Ltd., is continuing structural test work in Township 47-5w4, and is planning to make a definite location early in the spring to be drilled with heavy duty standard tools. Fabyan Petroleums, Lt., is securing a new rotary outfit which will be shipped in as soon as the weather moderates and will be used for Fabyan's No. 3. This test offsets the Imperial Oil, Ltd., mystery well., drilled some years ago to 2,830 feet and which had some gas and traces of oil. It was taken over last year by Fabyan Petroleums, along with the acreage, which had been surrendered some time previously by the Imperial company. Grenadier Oils, Ltd., with a tentative No. 1 location in LSD 10, Section 30-45-7w4, is planning to start work in the spring. Tom Rawn is preparing for development work on his holdings in the Wainwright Field.

Ontario Operations

In the Bothwell Field, Kent County, a shallow test drilled for the Acme Gas & Oil Co. on the River Thames near the Mission farm at Moraviantown is reported to have secured a fair production of crude. The location is about 1½ miles from the main Bothwell Field, and on the Moraviantown Indian Reserve, the first time oil has been struck on the reserve.

In Dover Township, Kent County, Acme Gas & Oil Co.'s No. 2, deep test, close to Ajax's No. 4 producer, finished a dry hole in the Trenton. Three new locations have been made, Acme's No. 3, Olga Oil & Gas Co.'s No. 4 and Ajax Oil & Gas Co.'s No. 7. The Acme and Olga tests are south of Ajax's No. 4 producer.

At the annual meeting of the Ajax Oil & Gas Co. the old board of directors was re-elected, with the exception of E. P. Rowe, who retired and was replaced by J. A. Wilson. President F. L. Culver stated that while Ajax's No. 4 had supplied the Union Natural Gas Co. with a peak of 4,000,000 feet in one day, it had been reduced to 2,700,000 feet and was now delivering about 1,500,000 feet. The reports showed that some $178,366 had been spent on exploration and development work, the cost of actual drilling of the Ajax wells ranging from $15,000 to $20,000 each. Nos. 1, 2 and 3 were small gassers, No. 4 a large producer, and Nos. 5 and 6 finished dry. No. 7 is being located, but drilling will not be started till a careful study has been made of the results of other tests in the same area.

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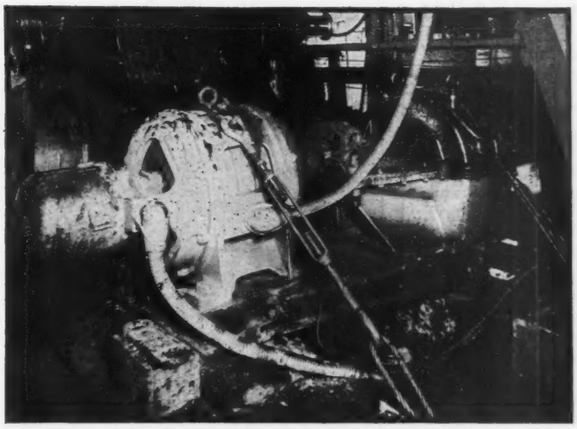

A Westinghouse-Nuttall drive. The 125-hp. gas protected rotary drilling motor is being driven through an OP-5 gear

BETTER drilling conditions and more dependable operation result from using the Westinghouse single-motor drive on the draw works.

This modern driving unit consists of the efficient, sturdily-built Westinghouse-Nuttall OP-5 reduction gear, a Westinghouse single-speed drilling motor, and control by which the necessary variations in speed are obtained.

Both motor and gear unit are assembled on the same base, forming a self-contained, compact drive that is easy to install and transport and occupies but little space.

Westinghouse OP-5 units can be used with 75, 100 and 125-hp. motors. The durable, heat-treated gears and shafts and the sturdy, totally enclosed case of these units provide strength to withstand the most severe service.

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ENGINEERS DISCUSS PRORATION METHODS IN OKLAHOMA CITY POOL

By L. G. E. Bignell
Petroleum Engineering Editor

At the regular monthly meeting of the Bartlesville Engineers Club held at Bartlesville, Okla., on the evening of January 21 the effect of the proration orders upon the drilling operations were outlined briefly by W. S. Morris who cited the following example to show how the opening date of an oil well could be determined. This table is based upon the time that will be required after cement has been run for the oil string of casing and dated back so that it will show a typical well in the Oklahoma City Field at this time.

Allow 7 days for cement to set; 30 days for shutdown of all wells between September 12 and October 12, 1929; 1 day for field shutdown October 27, 1929; 12 days for 40 per cent proration in November, 1929; 15 days for 50 per cent proration in December, 1929; a total of 65 days (not accumulative after January 1, 1930).

To this estimate all time consumed in drilling additional footage after the oil string was landed must be added, as well as all time consumed in making production tests. It is not the practice to consider time consumed in drilling cement as additional footage in well drilling.

When the well has served the prorated time (65 days plus additional drilling and production time) and comes on production as an A, B, C or D well the time allowed this well to produce for the remainder of the month is determined by percentage proration in effect. The well then enters the regular proration schedule.

These conditions must all be taken into consideration by the production company and they have permitted some changes to be made in the actual details of finishing the well and drilling-in and ample opportunity is afforded for making all necessary connections at the well head and providing tankage in sufficient quantity to meet the estimated requirements of the individual well.

In his talk before the meeting J. D. Turner gave the following outline of proration conditions that have been and are now effective in the Oklahoma City area:

"At Oklahoma City we have had a proration order of some description in effect since September 12, last year. The first was in the nature of a complete shutdown of all producing oil wells for a period of thirty (30) days. The second was a 40 per cent proration, i.e., the wells were permitted to produce only 40 per cent of the time. This method was in effect throughout the entire month of November and possibly was more or less of a departure from the more commonly known methods of prorating. Nevertheless it was found to be very satisfactory. All wells were divided into two (2) classes, namely, "A" and "B," with the object in view of having the total potential production of the "A" wells approximately the same as that of the "B" wells. A schedule was arranged whereby the "A" wells produced at full capacity for certain periods at intervals for a total of eighteen (18) days and were shut in the remaining twelve (12) days. The "B" wells following a similar schedule with the exception that they produced while the "A" wells were shut in and six (6) days while the "A" wells were open also.

"The December and January 1 to 20 schedule was based on a 50 per cent curtailment and during this period the "A" and "B" wells produced alternately at intervals of five (5) days.

"The present 75 per cent proration system became effective January 21 and will terminate March 3 unless changed during the meantime, or is extended at the end of the period. It was necessary when planning this system to give consideration to numerous facts and conditions, some of which are:

"1. To balance the oil production closely in order to maintain as flat a production curve as possible.

"2. To arrange all wells having the larger gas volumes such that drilling and other operations would have sufficient gas at all times and to insure a balanced gasoline production from operators' plants.

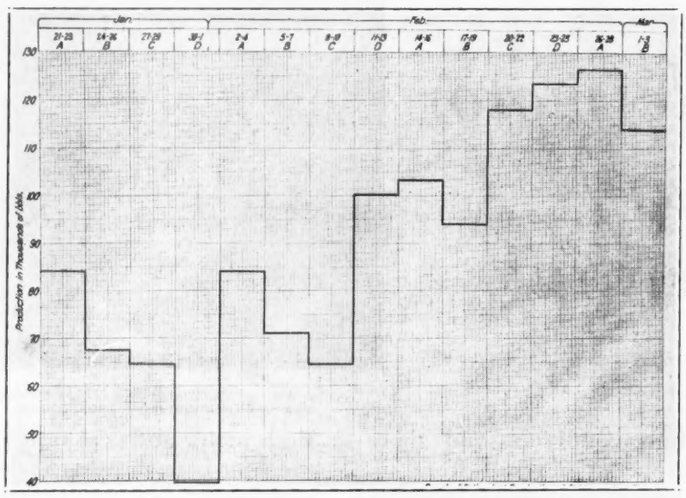
"3. To distribute the wells which are producing the larger amount of salt water throughout the period in order to avoid congestion and permit economical disposal of same.

"4. To arrange wells on schedule with respect to pipe line connection in order to avoid congestion or uneconomical operation.

"In order to properly take care of these requirements it was considered advantageous to use four (4) different classifications, namely, "A," "B," "C" and "D." Each classification producing three (3) days and shut in nine (9) days during each twelve- (12) day period. So much for the producing wells.

"All drilling wells are compelled to take a delay of sixty-five (65) days after cementing the oil string plus all time consumed in drilling additional footage after setting the oil string and all time consumed in making production tests. This sixty-five- (65) day delay is based on the percentage of proration in effect prior to January 1, plus an allowance of seven (7) days for cement to set.

"Our production curve indicates that the entire field will start on this new schedule with a total actual production of 65,000 bbls. and end with a total on March 1 to 3 of approximately 120,000 bbls.; whereas, were it not for the proration scheme the field production not including those wells which have not served their sixty-five (65) days shut in time would be four (4) times that aforementioned or 260,000 bbls. at present and 480,000 bbls. on March 1. If all wells which have been completed at this time were opened up we estimate that the field would produce approximately 600,000 bbls. per day."



Estimated production of Oklahoma City Field shown in graphic form as it would be under 75 per cent proration plan based upon latest available 24-hour gauges with no decline considered.

TWO-STAGE SEPARATION OF OIL AND GAS BENEFIT

(Continued from Page 34)

arators, divided roughly into those possessing control of both the oil and the gas outlets, and those possessing control of the oil outlet only. The latter control seems advisable only on separators operating at extremely high pressures due to construction difficulties of the shell.

Relatively low pressure separators offer greatly increased operating efficiency when they are equipped with both oil and gas outlet control. These controls are simultaneously operated by a float riding the fluid level within the separator. As the fluid level lowers, due to a lull in the flow from the well, the falling float automatically diminishes the outlet of the oil and enlarges the outlet for the gas. Vice versa, as the fluid level rises the riding float partially closes the gas valve, thus building up an increased pressure within the shell which tends to force out the fluid through the increased oil outlet.

Heading Wells

Most modern separators rely for separation upon centrifugal and impinging effects of the entering fluid, and on a low velocity of the rising column of gas within the shell. At any given pressure the separator has a definite capacity, which increases in some proportion with the pressure.

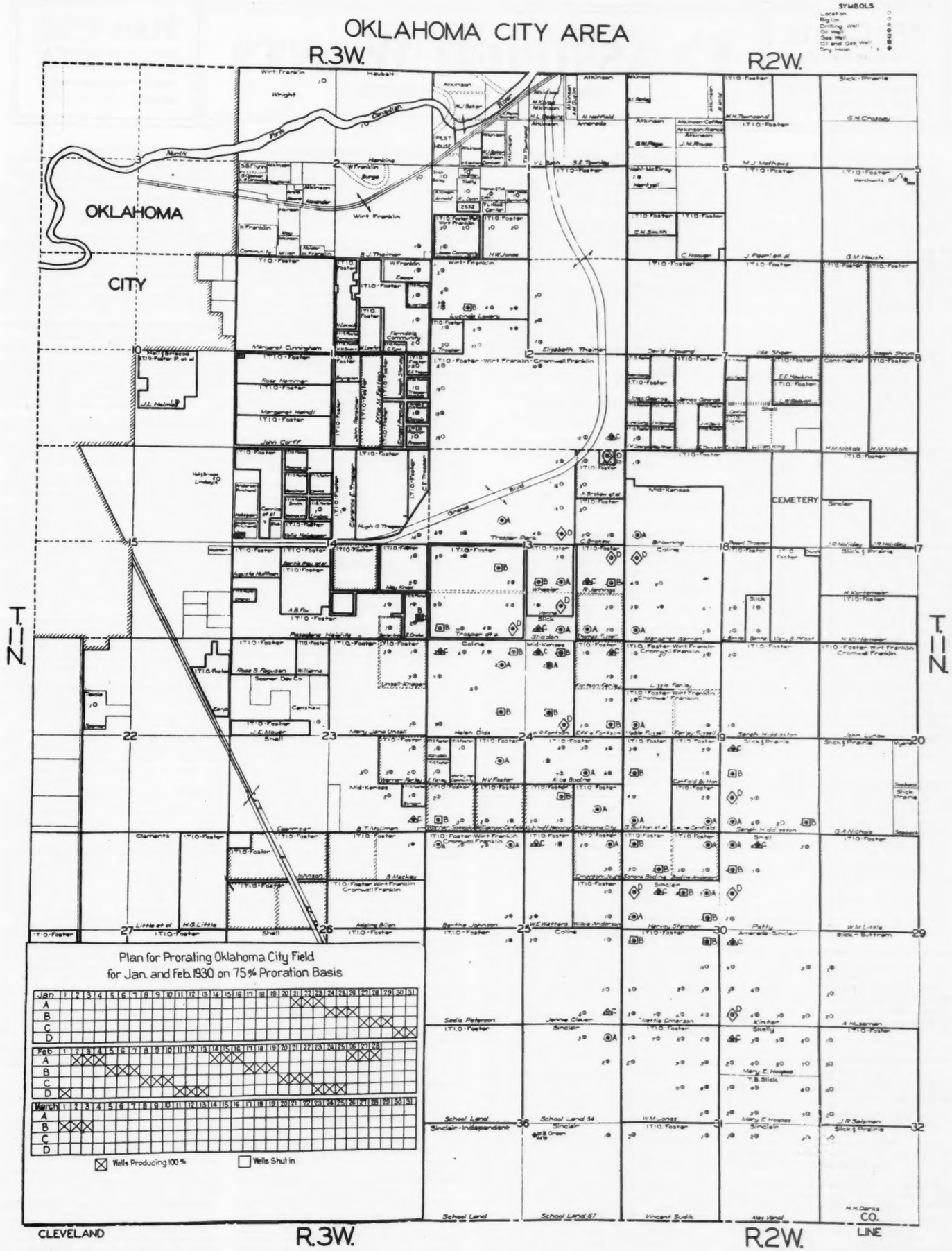
A large majority of wells do not flow steadily, but rather in short, jerky flows, or by heads. During the lull between heads, what may be termed a minimum volumne passes through the separator, and at the peak of the head a maximum volume passes through the separator. If the day's flow into the separator is less than the rating given, the heading condition may still put oil into the gas line and so create the impression that the separator is not functioning perfectly. Obviously, to correct such a situation, it will be necessary to either add more separator capacity, or remedy the heading condition. It is always necessary to install a separator of capacity greater than to care for even the short, snappy heads the actual flow from the well in order referred to.

I.O.M.A. ANNUAL MEETING

The annual meeting of the Independent Oil Men of America, with the election of officers will be held in Chicago on March 17 and 18. This is a meeting of the members held for the election of officers and directors for the ensuing year. There will be no exhibits. The place of the meeting will be announced later, according to A. Y. Hinchey, executive secretary.

DEATH OF CLARENCE W. HODGES

Clarence W. Hodges, general purchasing agent of the Worthington Pump & Machinery Corp., died recently at the Paterson, N. J., Hospital, as a result of an operation. He was 53 years old. Mr. Hodges was born at Randolph, Vt., May 15, 1876, and was graduated from Williams College with the class of 1900. For some years he was employed by the American Locomotive Co. as purchasing agent, and since 1918 he had been employed in the same capacity by Worthington Pump & Machinery Corp.



Map shows how the Oklahoma City Pool will be prorated in January and February, 1930, on a 75 per cent proration basis. The producing wells have been divided into classes A, B, C and D. Each class will be allowed to produce three days and shut in nine days. This plan will allow each operator to produce 25 per cent of his potential production.

35 CENTS a line first insertion; 25c a line each additional insertion. Cash in advance.

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MAIL your advertisement now. It will be published next week. Cash with order.

FOR SALE—EQUIPMENT

FOR SALE, or rent. Complete Gasoline and Steam Rotary drilling rigs, at attractive prices. Texas Supply Company, Lorraine and Semmes Streets, Houston, Texas.

READY FOR IMMEDIATE SHIPMENT—PRICED RIGHT
50 MILES 4" O.D. PLAIN END PIPE
11 MILES 12" O.D. PLAIN END PIPE
15 MILES 4" STD. SCREW PIPE
60 MILES 2" STD. SCREW PIPE
All sizes in casing and line pipe from 2" to 15½" inclusive.
PRODUCERS PIPE & SUPPLY COMPANY
612-13 Kennedy Building
Tulsa, Oklahoma.

WANTED TO BUY OR RENT. Good used oil or gasoline engine complete with clutch pulley and radiator to drill 5,000 feet. Give full particulars and price.
NEWAYGO GAS & OIL CO.
East Chicago, Ind.

FOR SALE
Sweetland Filters—Nos. 1, 2, 7, 9, 10. 8—2" and 3" belt motor driven Kinney jacketed Pumps, Tanks, Boilers, etc. Send for complete lists. Stein-Brill Corporation, 25 Church Street, New York, N. Y.

500 USED GASOLINE FILLING STATION PUMPS of various makes at a bargain, if taken in lots of 25 or more. Address, J. B. Thompson, Drawer 8, Purchasing Dept., St. Louis, Mo.

FOR SALE. 8 Sweetland Filter Presses, No. 12, No. 10, No. 9, No. 7, No. 2; 1—300 H. P. Scotch Marine Boiler; Miscellaneous—Compressors, Storage Tanks, Pumps. CONSOLIDATED PRODUCTS COMPANY, 17-20 PARK ROW, NEW YORK CITY. BARCLAY 0600.

FOR SALE two size E Cyclone Tractor Drilling Machines, complete with tools. Good condition. Also leases for sale in Southeastern Ohio, Pennsylvania Grade oil district. Address, H. C. Farmer, 58½ South 2nd St., Newark, Ohio.

FOR SALE—Used American Marsh Steam Pumping Engines, 2—6X36 and 5—7X24. 7,000 feet Regular 2-in. 4½ lb. and 5,000 feet Upset used LW tubing. Elliott Machine & Supply Co., Depew, Okla.

FOR SALE—Complete Rotary Drilling Rigs, and casing at attractive prices. Texas Supply Co., Lorraine and Semmes Streets, Houston, Tex.

TANK CARS—FOR SALE

Eight thousand gallons, now in gasoline service. Inspection at Houston, Tex.

Bargain Prices.

M. R. DUCEY RY. CAR CO.
Houston, Texas.

FOR SALE
Five 10' ID Chapman New Standard Rotary Gas producers, in first class condition. Full information on request. Pittsburgh Plate Glass Co., Barberton, Ohio.

TWO USED BLUE PRINT MACHINES. Very reasonable. Wire Box 912, Tulsa, Okla.

FOR SALE—MACHINE TOOLS
Bargains in used and rebuilt lathes, shapers, drill presses, pipe machines, milling machines. Five hundred machines in stock. Terms to responsible parties. Write for catalog.
Cincinnati Machinery & Supply Co.
26 West Second St., Cincinnati, Ohio.

FOR SALE—CHEAP
A complete Sullivan diamond core drill. Write Box E-87, The Oil and Gas Journal, Tulsa, Okla.

GOOD USED—Casing—Line Pipe—Tubing. Before you buy or sell, see Elliott Machine and Supply Co., Depew, Okla.

FOR SALE—EQUIPMENT

FOR SALE
Standard rig and string of tools. Or will trade for proven acreage or royalty. Dorsey E. Straitiff, Box 592, Casper, Wyo.

EQUIPMENT WANTED

WANTED TO BUY used two-stage air compressor. Must work with 25 H.P. engine. Consolidated Gas Co., Glasgow, Ky.

BUSINESS OPPORTUNITIES

OUR EUROPEAN OIL FINDER is available for making drilling locations The manufacturer of this instrument guarantees successful drilling locations D. C. Oliphant. 19 West 44th Street New York

BAILEY, REAVES & SMITH

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Specializing in royalty interests
Underlying lease-holdings of the
Major oil companies.
Inquires invited.

MILAM BUILDING
San Antonio. Texas.

YOU can make BIG money helping to develop the gold mining industry of Colombia, South America. For particulars address Davidson, 201 First National Bank, Denver, Colo.

SMALL KANSAS CORPORATION oil and gas developing company with several complete standard outfits for turnkey drilling either wildcat or proven acreage, including derrick tools and casing. Have several good bottom hole contracts. Needs advance money for payroll, fuel, etc. Can give good return with safety. Also good opportunity for parties with capital to connect with reliable operators having good office and field organization. Write Box E-63, The Oil and Gas Journal, Tulsa, Okla.

OIL LOCATED before drilling. Geophysical method. Toggodometer Instrument; take pay in oil. No oil, no pay, except traveling and testing expenses. 95 per cent accuracy. O. P. Coffin, Caddo, Tex.

OIL holds alluring possibilities but SAFEGUARD your future by an investment in World's Most Profitable Natural Industry—SHEEP. Own your own. We care for them without expense to you and guarantee thirty per cent annual returns on your money. 25c brings you full information.
Bow Island Sheep Co.,
303 Alberta Corner,
Calgary, Alta.

WANTED TO HEAR FROM someone having a good shallow oil or gas proposition who would like to take a partner who has a good shallow drilling rig for drilling 500 to 700 feet. Especially interested in transactions in Pennsylvania, Kentucky, Indiana, Ohio and Michigan. Address Box E-78, The Oil and Gas Journal, Tulsa, Okla.

CONTRACTOR with cable tools near San Antonio, Tex., desires drilling contract not less than 1,200 feet. Answer Box E-97, The Oil and Gas Journal, Tulsa, Okla.

MY BROAD ENGINEERING and business experience and thorough knowledge of drilling operations would be valuable to an oil company or operator in an executive capacity. Write Box E-96, The Oil and Gas Journal, Tulsa, Okla.

BROKER OR SALESMAN wanted who can interest capital in sound legitimate oil propositions. Attractive offer to make money. Permanent connection if you can quality. State qualifiations first letter. S. M. Stauffer, 419 Perrine Building, Oklahoma City, Okla.

FOR SALE OR TRADE
Reconditioned pipe, casing and Oil Field Supplies. Also Gasoline Plant Equipment. Lee Morrison Supply Co., Bartlesville, Okla. Branch yd. at Sand Springs, Okla.

BUSINESS OPPORTUNITIES

WOULD YOU pay my living expenses and carry me for small interest if I can convince you that my former experience in oil properties would net you a handsome profit in short time? References. J. T. Cox, San Angelo, Texas. R. R. No. 1, Box 581.

FOR SALE, or lease, on royalty basis a combination Gas Regulator and Safety Device. Patented. For full information write P. O. Box 14, Wilmot, Kansas.

U. S. Royalty Corporation
Organized by well known oil men and geologists. Write today for information. C. A. Johnson Bldg., Denver, Colo.

PERMANENT GASOLINE OUTLET
Super-service station with 200 car parking garage. Batteries and tires. Bulk storage. Finance this deal! One of the best set-up and layout in Illinois. Owner must devote all his time to the manufacturing business. Address: Box 133, Aurora, Ill.

CONTRACTOR with Star Machine in Southwest Texas desires contract up to 2,500 feet. Write Box E-89, The Oil and Gas Journal, Tulsa, Okla.

EX-OIL OPERATOR
Of wide experience and acquaintance in Southern States will give you liberal interest in a new company to furnish capital necessary to pay organizing expenses. References exchanged. J. T. Cox, San Angelo, Texas. R. R. No. 1, Box 581.

DEPENDABLE GOLD MINE
CRIPPLE CREEK, COLO.
Limited capital desired for improvements and expansion. Mining and shipments will soon follow. Information cheerfully given investors and brokers.
ATLAS GOLD MINES CO.
604 E. Fontanero, Colorado Springs, Colo.

POWER UNIT—New process for oil drilling; needed in production work by every driller; over $100,000 spent perfecting this unit. Ready for marketing. Owner needs this additional capital. Big profits, lifetime opportunity. Write for booklet. File 0-2150. The Apple-Cole Co., Transportation Bldg, Detroit, Mich.

ROYALTY COMPANY—Experienced oil man now employed in responsible position by independent oil company contemplates organizing royalty company and invites inquiries from those financially able to make substantial investment in such a project, whose policies of management are to be based upon safety and conservatism. Address "Royalty," P. O. Box 708, Dallas, Tex.

HUDSPETH COUNTY, Tex. ⅛ Mineral Deed under 5,887 acres. Leased 10 yrs. 50 cents, rental price 20 cents acre. W. E. Priddy, Wichita Falls, Tex.

EXCHANGE for acreage of equal value five lots in Aurora, Colo. For full information address Albert Hammer, Wallingford, Conn., R. D. No. 1, Box 55.

STRUCTURES WITH ACREAGE READY FOR DRILLING. Experienced graduate geologist and civil engineer makes careful studies, maps and reports; acquires acreage for oil and gas development. Offers excellent opportunity for investment. Write Box E-100, The Oil and Gas Journal, Tulsa, Okla.

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170,000 acres northern New Mexico. Some coal. Structure favorable for oil. K. A. Heron, Chama, N. Mex.

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CHEMISTS, draftsmen, designers, oil refinery operators, repairmen, engineers, etc. Write or wire, giving age, experience. Calls daily. Interstate Co., Security Building, Denver, Colo. Men-Finders built through 25 years world-wide service. Largest in West.

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$10 MONTHLY acquires 5 acres pecans, figs, oranges. Cared for. Suburban Orchards, Dept. J. Biloxi, Miss.

TWO LOTS in Tarkington League, Liberty County, Tex.; one lot Wilbarger County. 717 Milam Bldg., San Antonio, Tex.

HELP WANTED

WANTED: GEOLOGIST AND LEASE SCOUTS by Royalty and Lease Corporation now forming. Interest based on returns. Submit in first letter details, your technical experience in preferred profession. P. O. Box 566, St. Petersburg, Florida.

CHEMICAL ENGINEER for gasoline plants, must have some experience treating natural gasoline and water, distillation, vapor pressure, etc. Location Ranger District. Good prospects for capable and ambitious young man. Address Box E-95, The Oil and Gas Journal, Tulsa, Okla.

POSITIONS WANTED

PURCHASING AGENT. With a background of 18 years experience in oil and gas engineering field work wishes to make a change. Engineering education and an experienced executive. Write Box E-68, The Oil and Gas Journal, Tulsa, Okla.

DESIGNER-ENGINEER. 15 years general experience. 5 years refinery design. Open for position about March 1st. Write Box E-80, The Oil and Gas Journal, Tulsa, Okla.

ACCOUNTING EXECUTIVE: Thoroughly familiar with all phases of oil company accounting, seeks connection with reliable concern about March 1. References exchanged. Write Box E-86, The Oil and Gas Journal, Tulsa, Okla.

AUDITOR: 38 years old, married; ten years valuable experience all branches of oil industry, wishes new connection. Now employed as accounting executive large oil company. Best of references. Write Box E-85, The Oil and Gas Journal, Tulsa, Okla.

GAS ENGINEER with 18 years experience in all phases of oil and gas work, desires position as gas engineer or superintendent. Correspondence desired. Write Box E-67, The Oil and Gas Journal, Tulsa, Okla.

REFINERY ENGINEER, three years' experience design, construction and maintenance. Address Box E-77, The Oil and Gas Journal, Tulsa, Okla.

CAPABLE EXECUTIVE, 12 years' experience Texas, Louisiana and Arkansas fields. Familiar with drilling, producing, leases and royalty and general trading, now employed by independent oil company. Open for connection with producing or royalty company desiring Texas representative. Only responsible offers from reputable operators considered. Write Box E-99, The Oil and Gas Journal, Tulsa, Okla.

ACCOUNTANT, OFFICE MANAGER, 14 years' experience with major companies in Texas, Mexico and Venezuelan fields, capable of assuming full charge of office or accounting department. Best of references. Address Box E-98, The Oil and Gas Journal, Tulsa, Okla.

CAPABLE EXECUTIVE ASSISTANT who has had considerable railroad traffic, rate, route and car record experience and who is also an accountant and expert stenographer familiar with all branches of office detail, at present employed, desires to make change. Can make some oil company a good Traffic Manager or some executive a good assistant. Write Box E-88, The Oil and Gas Journal, Tulsa, Okla.

GEOLOGIST CONSULTING. Six years experience Oklahoma, Texas, Kansas and New Mexico with major oil companies, familiar with drilling, producing, ROYALTY and valuation phases of industry desires consulting part time connection with producing or royalty companies operating in Mid-Continent. Headquarters in Tulsa. Adaptable for branch office. Would also solicit connection with statistical Department of Eastern Houses for oil industry data. Only responsible offers considered. Address Box E-94, The Oil and Gas Journal, Tulsa, Okla.

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POINTER puppies high class and of the best breeding possible. Direct descendants of Fishel's Frank, Champion Comanche. Frank Etz. Buy a real Pointer. U. R. Fishel, Box O, Hope, Ind.

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LEASES—PRODUCTION

FOR SALE

Leases and installation of the Mexican Oil Company located at Topila in the Municipality of Panuco, State of Veracruz, Republic of Mexico. Terms of sale and detailed information will be furnished to prospective purchasers by application in person or by letter to Mexican Oil Company, Edificio Gomez, Tampico, Tamps., Mexico.

TEXAS LEASES 25 cents per acre and up in several interesting counties. Own over 75,000 acres. General Investment Company, 321 North St. Mary's Street, San Antonio, Texas.

WEST TEXAS mineral lands $2.50. Ten and twenty year leases, $1.25 and $1.50. Joe Cunningham, Big Spring, Texas.

NESS COUNTY, KANSAS, 7/8 Lease, 400 Acres 36-17-16w, near Continental Well. $25.00 per acre net.
516 Petroleum Bldg.,
Oklahoma City, Okla.

FOR SALE in Ventura County, California, a 24-acre tract of land clear at $55,000.00. Will give lease for five years at $15,000.00. Adjoining oil drilling location now operating. Address F. L. Moros, P. O. Box 644, Ojai, California.

FOR LEASE—25,000 acres Prospective Oil Land in Coahuila, Mexico. Rights confirmed to owner by Mexican Government. S. R. Gonzales, Naranjo 2, Altavista. Tampico, Mexico.

FOR SALE—160-acre lease, S. W. 14-6-10, Caddo County, $35 per acre, 5-year lease. ⅛ interest in 24 acres Sec. 21-12-2, west Oklahoma County. Box 161 Capital Hill Station, Oklahoma City, Ok.

60-ACRE lease, Van structure, N. E., $7 per acre. ⅛ Landowner's Royalty free. Tyler, 1130 Cedar Hill, Dallas, Tex.

OIL LEASES—In and around the fine productive oil fields of Texas. Will sell blocks of acreage of any size. If it is money that you want, get in touch with me. N. M. Bullock, Rockdale, Tex.

NEW VAN OIL field in East Central Texas oil belt. Write for Royalty and Lease prices. Frank Clarke, Grand Saline, Van Zandt County, Tex. Box 596.

WILL LEASE Sec. 26, Block C-26, Loving County, Tex. This section is owned by me. Address Mary Weber, Pierce City, Mo.

OWN A LEASE on 106 acres, Shackelford County, Texas, near Albany. No wildcat. Proven field. Producing adjoins. Want partner with a little money. Write Dr. H. E. Nelson, Dayton, Iowa.

FOR LEASE: Oil and gas rights on eleven hundred acres northwest of Stinnett in Hutchinson County, Texas. George B. Lucas, Austin, Texas.

FOR SALE Oklahoma, Kansas and New Mexico 5 and 10-year oil and gas leases in large and small blocks. Also Oklahoma and New Mexico royalties. Robert O. Zielinski, 12836 Wood St., Blue Island, Ill.

FOR SALE. LEASES on Red Coulee Structure, Northern Montana and Southern Alberta's new sensational Oil Field. Many new wells to be drilled immediately. Field now in production. Write us for information.
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PROVEN AND UNPROVEN Oil Leases and Royalties bought and sold. Reeves, Ward, Loving, Pecos and Culberson Counties. Wire or write H. F. Anthony, Anthony Building, Pecos, Texas.

WILL BUY

Producing oil leases or royalties in Kans., Tex., and Okla., (not Osage). State price, net production, gravity, number of wells and acreage. Write Box E-53, The Oil and Gas Journal, Tulsa, Okla.

HAVE BUYER FOR LOGAN, Cleveland and Oklahoma Co. leases, if priced right. R. J. Hill, R. 4, Box 106, Tulsa, Okla.

LEASES—PRODUCTION

FOR SALE—25,000 acres, 10-year paid up leases, Uvalde, Edwards, Kinney, Bandera and Real Counties, Texas. No rentals. $1.35 per acre. L. W. Stieren, Alamo Bank Bldg., San Antonio, Tex.

NEED MONEY—Will sacrifice 10-year paid up 160-acre oil lease. Will divide. Have structure map and abstract. Write H. C. Petersen, Route 5, South Omaha, Nebr.

OIL LEASES. 250,000 acres Pecos, Ten year paid up. 200,000 acre ranch. In fee highly improved. Other oil leases and ranches at great bargains. Box 244, San Angelo, Texas.

FOR SALE—Oil and gas lease on 149 acres out of Section 4, Township 4, Range 7, Pontotoc County, Okla. Fifty dollars per acre. C. R. Smith, Hereford, Tex.

FOR SALE. All, or part, of my Proven and Semi-proven Oil and Gas leases and royalties in Ark., and La. New Fields. Must drill four wells soon. To right party will give enough time to raise money. Price $50,000.00. For particulars address J. S. Dashko, El Dorado, Ark.

ROYALTIES—PRODUCTION

J. A. WOLF & COMPANY
127 N. Dearborn, Chicago, Illinois.
We deal in Oklahoma Royalties exclusively.

BUY ROYALTY. The royalty that sells for a few dollars today is the high priced production royalty of tomorrow. We have it at all prices. ELMER S. and FOX WOOD, 712 Herskowitz Building, Oklahoma City, Okla. Phone, 7-3514.

BUY DEEDED OIL ROYALTY interest Oklahoma County. 1/640th of Landowner's 1/8th of ALL OIL under 10 acres—$8.00, 40 acres $25.00, 80 acres $50.00. Act quick. Full information. Joe Milam 205 Oil Exchange Building, Oklahoma City, Okla.

FIVE-ACRE royalty between the Jarman and Magers well in Van Zandt County. Adjacent to well now being drilled. Will sell on basis of $50,000 per acre. Write Box E-101, The Oil and Gas Journal, Tulsa, Okla.

A REAL BUY

Ninety acres for sale in Orange Township, Ashland County, Ohio, including one-eighth royalty in two gas wells on farm. Good land, good buildings. One well three years old in Clinton sand, one well two years old in Newburg lime. Royalty now paying land owner from $75 to $100 per month. Locations for two more wells in Clinton lease operated by the Ohio Fuel Gas Co. Price $9,000. Write P. C. Fritzinger, owner, Myers Building, Ashland, Ohio.

WE BUY AND SELL producing royalties, finance drilling propositions. Submit offerings with descriptions. J. A. Harrison, 423 Kennedy Building, Tulsa, Okla.

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Warm Weather Aids Chicago Gasoline

But Has Adverse Effect on Market for Furnace Oils. Motor Fuel Stocks in Jobbers' Hands Thought to Be Light

By J. B. Waldo

CHICAGO, Feb. 3. — With weather that is bright and warm the first real thaw for a month the gasoline situation took on a more lively tone. Some of the sellers thought that there was a little better demand on Monday while others could see no real difference but the feeling was that there would soon be an increase in the demand for gasoline. Some of the local distributors reported that they had the best day on Sunday for weeks if not months. The present buying is still confined to immediate needs but the evidence was plain today that jobbers have very light stocks as practically every spot order called for prompt shipment or the earliest possible delivery. There was some spot buying due to it being the first part of the month and the usual orders on contracts. There was no change in prices, gasoline being too freely offered by Group 3 refiners at former prices to make an upward movement possible. Several quotations were received for immediate shipment for resale at 5½ cents for U. S Motor while the 400 endpoint was quoted at 6 cents immediate or 6⅛ cents for 60 days. The major refiners continued to name prices for spot ranging from 6½ to 7 cents but no real sales are being made at these prices. Jobbers were not doing any buying for storage.

Kerosene was quiet, but a few cars were being ordered mostly at 4 cents. The mild weather has made distributors of furnace oils careful of being overstocked and there was quite a number of sellers who had cars in transit which they were anxious to sell before arrival which gave an easier tone to the market for furnace and fuel oils for immediate delivery but there was little change in prices for regular deliveries. Very little new business was at hand on Monday in the fuel oil division, the movement being entirely on previous orders and contracts. Buyers in all products continued to be indifferent to their future needs and only ordered what they had to have in the very near future. The sudden warm spell of Saturday afternoon is continuing and giving encouragement to the gasoline division but is making sellers of fuel oil for heating less optimistic.

Gasoline Market Dull

The gasoline market was dull last week. The gallonage of the average jobber is right now greatly reduced by bad weather, collections are slow and from all sides come stories of tight money.

These conditions are sufficient to make the jobber careful not to buy more gasoline than he can readily sell. Even the largest integrated companies admit hat their distribution is reduced. They do not say how much but any oil man who has been out in the territory and seen the prevailing conditions knows that the reduction is a material one. Even in this city the let-up in the smaller number of cars in the center of the city is noticeable. Thousands of families are away from their homes in Florida, California or Europe for one thing. Unnumbered thousands have put up their cars and are not going to take them out of the garage until driving conditions are more pleasant and more safe. All of these conditions make the demand for motor fuel much less active.

It hardly needs to be said that if the distributor were selling more gasoline, he would have to buy more than he is doing at present. The sale of the U. S. Motor grade is suffering particularly right now. One large distributor with a string of 40 or more stations said frankly that his distribution of U. S. Motor gasoline was not 25 per cent of what it should be. He also stated that the sale of the higher gravities was holding up well and that sales of Ethyl Gasoline were increasing. Several station owners have stated during the last week, that their sales of Ethyl Gasoline were 60 per cent of their total gallonage.

Sales of Premium Gasoline Grow

Many brands of gasoline are now of a higher gravity than formerly and the sales of premium gasoline are showing an increase. Just now the demand from drivers is for a quick-starting gasoline. That is really a cold-weather requirement and will not be as potent later in the year. The automobile makers have done a good deal to foster the sale of better grades through their insistence that the buyers of their cars should use certain specification material. Some even insist on the use of particular brands and the result is that many car owners have been convinced that it pays them to buy the premium quality motor fuel. But so far the bulk of the demand is for the U. S. Motor grade and it seems unlikely that the popular demand will change permanently from those specifications to something higher in cost.

There was little activity in the gasoline demand last week and no buying for storage or in more than the usual quantities so far as could be learned. Large distributors are not convinced in their own minds that the price of gasoline will show the same advance in price between now and say June as it did last year. Some even state they believe that buying from month to month will be the most profitable plan this season. They may change their minds later if the market shows some strength and in fact several have stated that they would not buy until it did. While prices showed no real decline last week, there was a tendency to sag a little, due for the most part to the desire of some refiners to do business, even at a concession in price.

Usual Quotation 6½ Cents

In this market, the usual quotation for U. S. Motor gasoline by the major refiners was 6½ cents. Some asked 7 cents from occasional buyers but would care for their spot customers who bought of them regularly at less. Other sellers in this market stated that they were "trying to get 5⅞ cents." Others were asking 6 cents, but the demand was so limited that there was really little on which to base a market range for the U. S. Motor grade. The demand for the higher gravities was enough better by comparison than the U. S. Motor to hold prices with some steadiness.

The outlook at the close of the week was still uncertain with jobbers ordering for their immediate needs only, but as it was the beginning of a new month, the contract business was more active. Several jobbers in this territory stated that they had been unable to take out all of their contracts during January owing to the reduced distribution, but they were hopeful that the worst of the season was over and that from now on there would be some improvement in the gasoline demand, no great increase being expected over February but something better than January.

Kerosene More Active

Kerosene has been a little more active. Some sellers state that they have had fair sales as compared with the last few weeks, but the movement is not large. It is hardly time for the country jobber to buy in anticipation of an early tractor demand, for the early plowing is usually done with teams rather than tractors as the ground must be pretty well dried out to admit of the use of the latter. Prices were unchanged.

The demand for furnace oils showed increase with the cold weather. While the movement was larger it was chiefly on contracts. There was only a moderate demand in the spot market. The chief consumption is in the gas oils and the higher gravities of fuel oils which are nearly in the gas oil class and it indicates the kind of fuel that is required by the newer domestic type of burners.

All the zero oils were holding their own as to price. Distillates had a better demand and were less freely offered, giving the market for these a steady tone for first class material. There were some offerings of distillate, a little off in quality, quite commonly the complaint being of the odor, which could be purchased at some concession under the usual market. There was a steady demand for gas oils of the zero type both light and dark in color. The zero straw gas oil is scarce and commands a premium over the darker colored oils although there are many distributors who have got over their prejudice in favor of the straw color and have convinced their customers that color is not material.

Straightrun Gas Oils in Light Demand

Straightrun gas oils have been in light demand here. The large gas makers are not buying to any material extent, and the chief inquiry has come from the plants in the smaller towns which commonly have small storage and the less modern equipment. Some of the buyers who purchase for groups of companies will order several different kinds of material, some going so far as to reject gas oil from the crudes of certain fields for certain plants. The market has been fairly steady for these straightrun gas oils but does not have the full activity nor show the strength of the zero oil.

The gas company's idea of price right now is not over 2½ cents which is lower than most refiners are asking for their oil although some West Texas material has been offered at less than this price and is accepted by some gas companies as suitable for their purpose but it is asserted that the quantities to be had of this oil are not large.

The demand for heavy fuel oils is disappointing. There is a considerable movement, largely on contracts, but it is less than was expected. There was a general impression that immediately after the beginning of the year, every industrial plant would begin to operate at full speed. There has been only a fraction of the expected demand. This condition is not unusual, for well posted business men realize that in the average season, the larger industries do not begin to operate at anywhere near their capacity until after the middle of the month and sometimes until even later in the year. This year the larger industries have been rather slow in getting under way but the position of the major industries is now improving and approaching normal.

Small Spot Buying

This action of many of the users of industrial fuel oil has resulted in small spot buying and many reductions of the quantity of oil that would otherwise have been delivered on contracts. In spite of this condition, the supply of available fuel oil has been limited and prices are well held. Refiners assert that they have only small stocks and that they are shipping more than comes from their stills, that is the refiners who are a source of supply in this market.

There are some large supplies of fuel oil according to the published reports of the Bureau of Mines and the American Petroleum Institute but they are not made up entirely of the kind of oil that is generally usable in this market or they are not in a place where they can be delivered to fuel oil users in this territory.

The nearby refiners have stated and restated that they have no heavy fuel oil beyond their own requirements. One large company has stated that its December sales of fuel oil were 60 per cent less than they were a year ago and this was not because it could not have sold the full quantity but because it did not have the fuel oil to sell, having cracked it for gasoline.

Another of the large nearby refiners has had nothing regularly to sell outside its contract customers and its own distribution. This condition was known early in the fall but it was expected that there would be a continuance of the cheap fuel oil from West Texas. Small supplies have come from this source. As a result there has been a scramble for fuel oil and it is perhaps fortunate that the actual demand has been no larger than it has been. The smaller refiners which operate as skimming plants in this territory, have had a demand in excess of their capacity and have sold their output promptly at full prices.

Queer Situation Develops

The hesitating nature of the demand last week resulted in a peculiar position described by one large dealer when he stated in response to an inquiry regarding the market on 18-22 zero fuel oil that it was "85 cents when you wanted to buy and 80 cents when you tried to sell." There has been some 80-cent fuel sold here and the quantity may increase shortly, as some of the West Texas group of refiners have 18-22 zero fuel oil which they would like to sell at some price which would permit of its offering here at 80 cents or a little less if they wanted to cut the margin. But this is about the only straight product on which there has been any such offering. Some lots of 28-30 blended fuel oil are being offered at slightly less than recent prices but for the most part the sellers are counting on a continued good demand for the heavy fuel oils for heating through February and a gradual increase in the demand for fuel oil for manufacturing and industrial uses generally. Even the railroads would use more fuel oil with better weather and the increase in merchandise shipments. The uncertainty as to crude costs of the last two weeks, has has had little influence as yet on the fuel oil market but as so many railroad contracts are based on the price of crude under certain conditions that the final adjustment may make an important difference to both buyer and seller. Many of the old railroad contracts were based on the Prairie Oil & Gas prices. Some, if not all, of the newer contracts are based on the prices named by a majority of the larger crude buyers.

Market for Refinery Stocks Unchanged

There has been no change in the market for refinery stocks and little is doing at present. The heavier motor oils which contain around 50 per cent of bright stocks must cost more than a year ago when there were many contracts in force for bright stocks at prices which are 10 cents below the present prevailing prices for Mid-Continent bright stocks.

The local market for industrial lubricating oils is badly cut. One refiner-compounder using a vacuum process to refine stocks, is making what some call "revolutionary" and others "silly" prices. It is the impression that an effort is being made by this method to take away some part of the industrial business which has gone to one of the larger refiners in this market. The result is that the market for industrial lubs is being cut right

(Continued on Page 130)

Prices Undergo Revision in the East

Adoption of Bulk Cargo Market as Basis Causes Changes in Tank Wagon and Service Station Gasoline Throughout Whole Area

By A. E. Mockler

New York Bureau, The Oil and Gas Journal, Rooms 1919-21, No. 154 Nassau Street

NEW YORK, Feb. 3.—Numerous revisions in tank wagon and service station gasoline and kerosene prices, a firming up in the position of the paraffin wax market, and further declines in cylinder stocks have featured the East Coast refined products market this week. As outlined in last week's report, Standard of New York has adopted the cargo market at tidewater as the basis for its gasoline tank wagon and service station price structure, with quotations revised at all points in the company's territory in conformity with this decision.

Developments of outstanding importance have been lacking in the refinery gasoline situation. The posted price has not been revised, but price shading is still more or less general throughout the area.

Eastern oil interests are closely watching developments in the crude petroleum price situation in the Mid-Continent. Large eastern integrated companies have important producing subsidiaries in the Southwest, and are opposed to the price cuts put into effect last month by Standard of New Jersey's subsidiaries. Mid-Continent oil men have been in New York during the week, supposedly sounding out sentiment here, and this has brought the Mid-Continent fight on the crude cuts close to home.

Sentiment in Washington concerning an import tariff on crude oil is now a matter of interest among eastern oil men. East Coast refineries are running largely on South American crude, the average consumption of crude in this territory being close to 50-50 on the domestic and the imported products. The possibility of any Congressional action looking to the imposition of an import duty on crude oil or refined products is believed to be remote, however, although the crude price situation in the Southwest has succeeded in reviving interest in the subject.

Tank Car Gasoline

There is little to be said for the refinery market this week, save perhaps that the undertone has softened further. As has been the case for a number of weeks back, considerable business is going through at 8½ cents per gallon and less for U. S. Motor at the refineries, but the official posted price remains at 8¾ cents. Price cutting is by no means confined to the New York area, extending up to the Boston market and down the Coast to the South Atlantic markets. California gasoline is coming into the South Atlantic area in larger volume, and this is unquestionably adversely affecting market sentiment. In addition, considerable quantities of South American gasoline are being received at Baltimore and points further south, with New York and Boston also getting their fair share of the Venezuelan product.

Standard of New York's swing to the bulk cargo market as the basis for its tank wagon and service station prices presages sharper competition in inland distributing points, it is believed. The New York company will maintain a tank wagon price at many inland markets but little over the prevailing tank car market at those points. This will materially lessen the spread which independent markets have to work on, and is expected to go far toward eliminating the price-cutting competition which has been such an unfavorable factor in East Coast markets in recent months.

California gasoline can still be bought for Coast shipment at a price figuring out 8 cents per gallon or less laid down at New York, and the East Coast market cannot make much progress toward stability while this situation continues. Marketers and refiners in this area believe that the drastic cuts in crude production inaugurated in a number of producing areas may help the statistical position of the market, and possibly result in a bettering of the gasoline price situation, but such a development, it is felt, is a few months off.

Jobbers meanwhile are still bearish in their market sentiment, and hand-to-mouth buying is the order of the day. In fact, there is little in the situation to justify operations other than by this method. The entire East experienced a heavy snowfall, reaching blizzard proportions in some areas, and this, in conjunction with uniform cold weather throughout the period, has naturally resulted in a sharp drop in gasoline consumption.

Tank Wagon Gasoline

Tank wagon and service station gasoline prices are revised throughout the entire New York and New England territory, as a result of Standard of New York's action in adopting the bulk cargo market as its basis, effective February 1. Other companies are being compelled to meet this competition. The new pricing method, which figures retail prices in tenths of a cent per gallon, is expected to stimulate sales, larger purchases at one time being conducive to receiving the lowest net price.

Price cutting in motor gasolines is still more or less general. In Brooklyn, one large chain during the week was selling a leading brand at 6 gallons for 95 cents, figuring out slightly under 16 cents per gallon, tax included. Up-State markets have also been the scene of considerable price cutting.

Premium gasolines continue to hold their 3-cent premium over the ordinary "white" gasolines, and are moving in substantial quantities.

Tank wagon volume has fallen off sharply during the week, reflecting unfavorable weather conditions in this territory.

Kerosene

Tank car movement has picked up, and the market is steady at 7¾ cents a gallon for water white at the refineries. Cold weather has stimulated sales, and jobbers are in the market for supplies in good volume. Export movement has also held up well during the week, and the statistical position of the market in this area is favorable.

Tank wagon prices have been lowered at many points in the New York and New England markets. Under the new system of pricing, the bulk kerosene market at seaboard is not used as the basis for tank wagon and retail prices, but instead a fixed differential is maintained between gasoline and kerosene. Tank wagon prices at all points in Standard of New York's territory are now posted at a flat 3 cents per gallon under the posted service station price for gasoline, and it is expected that other marketers will be forced to do likewise to meet this competition. The change in pricing policy has forced reductions at a number of points in the territory, marking the first time in more than two years that the tank wagon kerosene market has been revised in New York and New England.

Kerosene distillate is meeting with a good demand, and the market holds steady on both the local product and the numerous California shipments which have been received at East Coast ports during recent weeks.

Lubs

Further weakness has developed on a number of cylinder stocks this week, and the market is little better than stagnant. Buyers are definitely bearish in their price views and are apparently determined to withhold buying support as long as possible in an effort to force prices still lower. Offerings of 600 steam refined are reported on spot this week at 30 to 31 cents per gallon, a drop of 1 cent, with similar reductions shown on 635 steam refined at 32 to 33 cents per gallon and 650 steam refined at 36 to 37 cents per gallon. Bright stocks are down a half-cent at 49½ to 50 cents a gallon for the light and 48½ to 49 cents per gallon for the dark.

Jobbers are apparently convinced that the market for cylinder oils will go lower. In a number of instances offerings were reported this week at prices figuring out but 6 cents per gallon over the bulk quotations in the field. Normally the barreled product here is held at an 8-cent differential over the bulk price in the field.

Compounders and blenders have shown no inclination to come in early to cover on their spring requirements of cylinder oils, and export operators as well continue to remain out of the market, save for small parcels for prompt and nearby shipments.

Domestic consumption of red and pale oils has shown a little improvement during the week, and the market holds steady and unchanged on all grades. Refiners report that tank car movement has picked up a little, and the outlook for spring business is regarded optimistically.

Paraffin Wax

A firmer undertone has developed in the wax market this week under better buying on the part of both the domestic and export trades. Spot 120-122 is quoted up an eighth cent at 3⅞ cents per pound, with 130-132 a.m.p. showing a corresponding gain at 4⅝ cents. Other grades are unchanged.

Consumers in a number of instances have come into the market this week with business running three months ahead, and the market feeling is definitely stronger. Export buyers have been inquiring for fully refined grades in fair volume during the week, but shipments of crude scale in export channels are still restricted. While considerable of the current buying is for shipment out of New York and Philadelphia, fair sales are also reported to have been made for prompt and nearby shipment out of the Gulf. South America has been operating in a fair way at the Gulf.

Gas Oil

The market range continues unchanged at 4¾ to 5¼ cents per gallon. The top price, which is the posted quotation, is largely nominal, a large part of the business going through at 4¾ to 5 cents a gallon. Manufactured gas companies in New York City are drawing stocks on contract in continued heavy volume, but there has been a little let-down in consumption on the part of other Eastern gas companies, a number of which are experimenting with bunker fuel oil in place of the higher priced gas oil.

Disposal of gas oil output is becoming less of a problem as the cracking branch of the industry shows continual progress, however, and the statistical position of the market is fairly sound. California gas oil is moving eastward in regular quantities, and is becoming more of a factor in the situation in the East. The movement of the Pacific Coast product is expected to show further gains as the East Coast price basis makes the market here an attractive one for surplus California production.

Diesel Oil

Refiners have a good part of their current production under contract, and the spot market is rather a routine affair. The market holds at $2 per barrel, in bulk, f.o.b. terminals, for large-lot business, with $2.10 quoted in some instances.

Further gains in marine consumption of Diesel oil are looked for this year. In addition to the steadily growing commercial tonnage of Diesel-powered ships, most of the large yachts now coming into service are Diesel-drive, and this volume, in the aggregate, runs into fairly large totals.

Industrial consumption of Diesel oil is gaining but slowly. A number of Diesel locomotives are in use in switching service on the Eastern roads, but thus far the experiments of the carriers have not yet progressed to the point where they are satisfied to go ahead and replace coal with Diesel to any great extent. The use of Diesel oil in stationary installations, however, is showing substantial gains, with further interesting developments in that direction looked for by eastern oil men. As is the case with other heavy oils, California refiners are shipping Diesel oil to the Atlantic Seaboard territory in larger volume, but no price cutting in eastern jobbing markets is reported as yet.

Furnace Oils

A fairly substantial volume of business on domestic heating oils prevailed throughout the week, weather conditions being favorable for heavy consumption. The market remains in steady position, with tank wagon prices in local and nearby territories ranging 4 to 4¾ cents per gallon for 14-16 gravity oil, 6 to 7 cents for 24-26 gravity, 6½ to 7¾ cents for 28-32 gravity, and 9½ cents per gallons for 36-40 gravity.

While the bulk of the current movement is against seasonal contracts, there is still a good volume of spot business transpiring. Many consumers, particularly large buyers such as apartment houses, department stores, etc., booked about 50 per cent of their estimated requirements on contract this year, and have been covering the balance of their needs in the open market. This has made for a healthy volume of spot sales right along.

Bunker Oil

Refiners continue to hold bunker "C" at $1.05 per barrel, bulk, at East Coast refinery terminals, with a good movement reported. A number of large marine consumers have increased their contract withdrawals this month, and this spurt in volume is expected to hold through the next two months. The increase is accounted for by the fact that a number of transatlantic liners have been taken off their regular runs and are in the West Indies cruise service during the first quarter of the year, with practically all of their fueling done at New York. Many of these vessels, while in their regular runs, customarily fuel up for the west-bound crossing at New York, and take on oil at European ports for the eastward voyage to New York.

Industrial consumption of heavy fuel oil is picking up slowly, as manufacturing operations gain, and a steady improvement in this direction is looked for during the spring season.

The bunker oil market is in fairly steady position locally, and there is very little of the destructive price competition which has characterized the market in past seasons. California fuel oil arriving at East Coast ports is moving into consuming channels on contracts and has not had any adverse influence upon the price situation in the East.

Exports

Gulf export markets have been uneventful throughout the week, with no cargo fixtures reported on either gasoline

or kerosene during the period. The export association price basis continues the prevailing market. Bunker "C" fuel oil was offering for export shipment through the Gulf at 65 cents per barrel in cargo lots, but no fixtures were reported closed.

There were no further developments reported in the Panuco crude market. Current asking prices were 71 cents per barrel, plus export taxes, although it was reported in some quarters that 70 cents could probably be worked if a sizeable quantity were involved. Most of the buying of Panuco crude has been for shipment to Europe, although one large contract has been closed for shipment to the United States.

No further transactions in Venezuelan crude are reported, and offerings are not large. There appears to be considerable difference of opinion regarding the current market price of the South American product, with price views varying all the way from 70 to 75 cents per barrel at tidewater.

While several cargoes of California gasoline for shipment abroad are believed to be pending, there have been no cargo contracts closed during the week. California refiners are currently quoting 6 cents per gallon, but it is reported in a number of quarters that the Pacific Coast U. S. Motor grade can be bought at levels showing a netback of not over 5¾ cents per gallon.

Export trading in refined products has been rather well sustained at East Coast markets during the week. Gasoline shipments into foreign consuming channels are well maintained, with both the bulk and cased products moving. Practically all of this recent business has been in less-than-cargo lots, however. Kerosene export shipments have also been running into sizeable totals, with movement of the cased product predominating locally. Paraffin wax exports have picked up, but volume on cylinder stocks still continues disappointing, although other grades of lub oils are moving regularly. East Coast refiners have been getting more export inquiry for varnish makers' and painters' naphtha for export during the past few months, it is stated, and several fair-sized cargoes have gone out, with the U. K. in particular interested in this product.

Petroleum Exports

The following table shows principal exports of refined petroleum products from New York for the past three weeks (all figures in gallons unless otherwise noted):

	Week ended		
	Jan. 25	Jan. 18	Jan. 11
Gasoline	900,000	870,000	130,000
Naphtha	825,000	1,970,000	1,130,000
Kerosene	25,000	315,000	53,000
Fuel oil	125,000	38,000	23,000
Lubricating oil	3,410,000	1,841,500	1,385,000
Petroleum, ref.	1,725,000	3,687,000	2,022,000
	Pounds		
Petrolatum		19,000	196,000
Paraffin wax	2,205,000	1,698,000	2,215,000
Refined	1,300,000	197,000	
Scale	812,000	1,185,000	1,085,000
Lubricating grease	1,620,000	1,635,000	1,075,000

Imports

Imports of crude and refined petroleum at the principal United States ports for the week ended January 25 totaled 2,193,000 bbls., a daily average of 313,286 bbls., compared with 1,980,000 bbls., a daily average of 282,857 bbls. for the previous week and a daily average of 269,000 bbls. for the four weeks ended January 25. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Boston	175,000
New York	1,221,000
Philadelphia	407,000
Others	327,000
Total	2,130,000
Daily average	304,286
At Gulf Coast ports—	
New Orleans and Baton Rouge	63,000
Total	63,000
Daily average	9,000
At all United States ports—	
Total	2,193,000
Daily average	313,286
Daily average four weeks	269,000

California Oil Receipts

Receipts of California crude and refined oils at Atlantic and Gulf Coast ports for the week ended January 25 totaled 665,000 bbls., a daily average of 95,000 bbls., compared with 868,000 bbls., a daily average of 124,000 bbls. for the previous week, and a daily average of 83,643 bbls. for the four weeks ended January 25. Details follow:

	Bbls. of 42 gals.
At Atlantic Coast ports—	
Baltimore	270,000
Boston	60,000
New York	82,000
Philadelphia	253,000
Total	665,000
Daily average	95,000
Daily average four weeks	83,643

There were no receipts at Gulf Coast ports during the week. Distribution of total California oil receipts at Atlantic Coast ports were as follows:

Gasoline	535,000
Gas oil	130,000

Shipments of refined production from California for the week, with ownership of tanker moving product where such vessel is operated by an oil company, follow:

To New York—81,700 bbls. of gasoline on the David McKelvy (Tide Water Associated Oil Co.), and 80,500 bbls. of gasoline on the Hugenot.

To Baltimore—129,500 bbls. of gasoline on the Tamiahua (Richfield Oil Co. of California); 74,600 bbls. of gasoline on the Virginia (The Texas S. S. Co.).

To Philadelphia—79,100 bbls. of gasoline on the Elisha Walker (Pan American Petroleum & Transport Co.).

ROCKY MOUNTAIN AREA

(Continued from Page 56)

and cold weather, along with frozen water lines, caused a cessation of work in all the wells in San Juan County.

WYOMING

Operations in Wyoming were at a minimum on account of the cold weather. The 11 scattered wells of the Producers & Refiners Corp. are still shut down, most of them to remain down until spring. Most of the wildcats in the southwestern part of the State are idle and none is reported drilling in the western area.

Washakie County

California Exploration Co.'s No. 1, SE NW NW, Section 31-48-89, Nowood Dome, has been abandoned at 2,711 feet, at which depth it had a show of oil that was drowned out by water. The hole is 270 feet in the Madison lime. A much better show was encountered in the top of the lime at 2,501 feet.

Fremont County

The Texas Production Co.'s No. 1 State, SW SW, Section 36-34-95, Alkali Butte, is drilling at 2,460 feet.

Natrona County

Midwest Refining Co.'s No. 29-DT, NW, Section 35-40-79, Salt Creek, the deep test, is bottomed at 3,094 feet and running the 10-inch to case off the oil in the Sundance.

Park County

The Texas Production Co.'s No. 1 Sonners, NW cor., Section 29-51-100, Oregon Basin, is running tubing to put it on the pump. It swabbed around 600 bbls. a day from the Embar at a total depth of 3,600 feet. Midwest Refining Co.'s No. 31 Rosenberg, SW NE, Section 25-58-98, Frannie Dome, is bottomed at 1,152 feet in gray and red shale and underreaming the 13-inch at 1,125 feet.

Carbon County

Midwest Refining Co.'s No. 31 Dutton Creek, SW SE, Section 1-18-78, is bottomed at 3,175 feet and thawing out lines.

IDAHO

Gem State Petroleum Co.'s No. 1 Arbon Valley, NW, Section 2-11-33, Powers County, is reported bottomed at 3,900 feet with 5-inch on bottom. Last 1,800 feet has been through carboniferous shale. Grand Teton Oil Co.'s No. 1 Blevins, SW, Section 35-5n-44, Teton County, is making hole below 1,905 feet after shutting off water with the 10-inch at 1,711 feet.

UTAH

Drilling operations in Utah slowed down for the week on account of the cold weather. The Florence Syndicate's No. 1 McCarthy, SW SW, Section 27-21-19, Crescent area, Grand County, is shut down at 1,945 feet. Cisco Springs Syndicate's No. 1 Moss, SE SW, Section 9-20-23, Grand County, is shut down at 1,985 feet. Diamond Oil Co.'s No. 1, SE NW, Section 16-8s-5e, Utah County, is shut down at 1,700 feet. Continental Oil Co.'s No. 1 Boundary Butte, NW SW, Section 22-43-22, San Juan County, is shut down at 5,612 feet waiting for die nipple. Midwest Refining Co.'s No. 1 Pary, SW SE, Section 14-39-1w, Kane County, is bottomed at 1,840 feet and running the 12½-inch to shut off water. Utah Southern Oil Co.'s No. 1 State, SW SE, Section 26-21-23, Grand County, is rigging up.

COLORADO

Little progress was reported this week in Colorado wells. The majority of the wildcats are still shut down and many of these will make no attempt to resume drilling until spring. The difficulties encountered in drilling in mountainous country with the thermometer below zero, water lines freezing and the problem of moving in supplies a hard one, has been emphasized during the past few weeks. In Denver, the thermometer has been below freezing for several weeks and for about two weeks it was below zero. The lowest touched in the city was about 25 below zero, but in more exposed localities the mercury went much lower. Water connections for Denver homes are laid approximately 4 feet below the surface. This year the frost has gone that deep and more than 1,000 homes have had their pipes frozen.

Moffat County

Only three wells showed any progress in this county. The Midwest Refining Co.'s No. 19-SD Parkinson, SW NE, Section 22-4n-92, Iles Dome, is drilling at 1,255 feet in soft gray shale and bailing about one bailer of water per hour. The Midwest's No. 24 Hannewalt, SE SE, Section 4-6n-92, Bell Rock structure, is bottomed at 810 feet in brown shale and running the 16-inch at 438 feet. Mountain Fuel Supply Co.'s No. 1 Lasher, Section 25-12n-100, Bartram Dome, cemented the 9⅝-inch at 1,212 feet.

Larimer County

Continental Oil Co.'s No. 5 Scott, NE NW, Section 6-9n-68, Wellington Dome, is drilling at 1,170 feet in the Hygiene.

Fremont County

Continental Oil Co.'s No. 2 Harding, NE SW, Section 21-18-70, Orchard Park district, is rigging up, and its No. 4 Steinmier, SW SW, Section 35-18-70, Canon City district, is drilling at 285 feet.

Las Animas County

Mountain States Gasoline Corp.'s No. 5 Sandoval, SE NE, Section 4-34-62, Garcia Dome, is standing at 2,175 feet and probably will be carried deeper at a later date. This company, which is producing gas for an absorption plant it operates on the property, is preparing to start two additional wells. The gasoline produced is being marketed in the company's own filling stations and the plant is operated at sufficient capacity to meet market demand.

Bent County

Continental Oil Co.'s No. 1 Pipe Springs, NE SE, Section 27-27-49, is standing at 5,490 feet in dark shale.

Rio Blanco County

The Texas Production Co.'s No. 1 Potter, NE SW, Section 30-2n-96, White River, is bottomed at 5,632 feet and fishing for drill stem.

MONTANA

The Border Field of Red Coulee was in the limelight the past week. The McDonald-Farbo well reached the stray sand between the Ellis and the Sunburst sands and was a gasser there, then it was drilled deeper and came in an oil producer good for 100 bbls., 35 gravity.

The Cosmos well, on Section 2-37-4, in the same field, reached the Sunburst sand at 2,408 feet and found an oil and gas flow that took the crew by surprise. The well filled a 250-bbl. tank in an hour and 45 minutes, but part of this was water. The important fact is that it is a commercial well in the Sunburst sand, a sand up to now considered dry so far as oil went.

The Mid-Continent Oil Co.'s No. 1 is now on production and making about 100 bbls. per day. Before running the tubing this well made 85 bbls. with the swab in eight hours.

The Vanalta No. 2, on the Canadian side of the line is drilling at 1,380 feet

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WARM WEATHER AIDS CHICAGO GASOLINE

(Continued from Page 128)

and left by competing concerns who are seeking this business.

There was no general change in the tank wagon scale in this territory last week and it is believed that none will be made until there is some change in the price situation for Mid-Continent crudes. Undoubtedly the bad weather in this territory which has prevailed since the middle of December, has made an important reduction in the volume of gasoline distributed and some of the best posted in the local industry will not be entirely surprised if the increase in gasoline sales for December and January is small over las year during the same months. The statement of some of the larger companies in the territory that they had made a good increase is attributed to added stations and the fact that they have added to their own gallonage the business previously done by some well established independent companies who had sold their buisness.

Prices Being Cut

Little is being said regarding the cutting of prices in this territory, but nevertheless there is much of it going on. Here in Chicago the tank wagon and service station scale remains 2 cents below normal. Some amusement has been caused by the filing of a complaint before the Federal Trade Commission regarding this reduction in price as few can see what action the complainant can expect as the reduction was openly posted and it cannot be intended that the selling price is less than cost when U. S. Motor gasoline is being sold delivered at Chicago at 8½ cents and the station price is 15 cents after the reduction of 2 cents from normal not including the tax which must be added. One reason why it will be rather difficult to maintain a firm price in this market is that there are now several small refineries which can deliver at a cost of one-eighth cent a gallon and make their profit from the difference in freights in season of light demand. When the demand is more active they have the advantage of quick deliveries and often obtain some premium over the Group 3 prices for this prompt service.

E. E. SCHOCK DIES

E. E. Schock of Okmulgee, Okla., refiner and oil producer, died Thursday in a hospital at St. Louis, Mo., following a major operation. Mr. Schock had been a resident of Okmulgee for more than 25 years, moving there from Okemah, Okla. In 1915 he organized the Indiahoma Refining Co. While with the Indiahoma, he assisted in organizing the Western Petroleum Refiners Association and was its president for some time.

Besides his widow, Mr. Schock is survived by four sons, W. O. Schock of St. Louis, J. J. Schock of Tulsa, D. E. Schock and C. F. Schock of Okmulgee, and a daughter, Mrs. Guy M. Steele of Okmulgee.

SALE OF SETTLED PRODUCTION

The Mid-Kansas Oil & Gas Co. has sold to Jackson & Wise of Tulsa and Sapulpa certain producing properties in Nowata and Washington Counties, Oklahoma, consisting of 2,000 acres of leases containing 140 oil wells, producing about 40 bbls. per day.

MAP COMPANY EXPANDS

The Logan Map Co., of Fort Worth, Tex., has increased its capital stock to $30,000 and will add to its force of draftsmen and field men. New officers are R. V. Logan, president; J. Ray Stebbins of Tulsa, vice president; and W. T. Logan, secretary-treasurer.

Natural Gasoline Manufacture

Operator at Plant Is Responsible for Regular Inspection

By H. L. Mitchell
Standard Gasoline Co.

The operator is responsible for conditions everywhere in the plant—indirectly for conditions of the compressing equipment inside and directly for conditions of the processing equipment outside.

The first duty of an operator coming on tour is to make a round of the plant with the preceding operator. This is not necessarily a check on how things are being left by that operator but it brings to the minds of both certain plant conditions which may be discussed between them for their mutual good, and consequently for the good of the plant.

After this first trip together, a round should be made, by the operator on duty, every half hour and sometimes more often if conditions are not right. This assures better temperature and pressure control, therefore more efficient operation. On these trips around the plant the more important things to be noticed are: conditions at boiler room; oil level in absorbers, intake and discharge scrubbers, vent tanks and strippers; the oil circulation meter; water in cooling towers; stripper pressure and temperature; conditions at rectifier, gasoline level in storage tank, intake meter charts and the charts in meter house.

Checking Charts

It really is surprising how much may be ascertained about how the plant is operating, from a glance at the charts in the meter house. For example, if stripper temperature conditions are not as they should be, it will usually show on the boiler fuel meter. Then of course an engine down can be readily noticed on the compressor fuel meter but the oiler probably will have already notified the operator of this. Thus the meter house is the first place to visit, where convenient, on making a round, for something shown there might tell you "to make tracks" for some particular point in the plant which needs immediate attention.

Occasional rounds must be made of the compressing equipment inside, which of course, include oil and water pumping units. Here the oiler is on duty and a few minutes talk with him along with a casual inspection will tell you if these units are functioning properly. Most faulty inside conditions will be noticed outside as well so that the operator usually knows without going in, what conditions exist there. However, this does not mean he shouldn't make rounds inside but in case of extra busy conditions outside, which keep him there the whole tour, he necessarily skips that part of his routine.

Great care should be taken to prevent leaks, gland leaks being the most common and also the most easily prevented. Beside the operating, there is certain equipment that the operator has to keep clean and painted so he doesn't have any trouble keeping busy. But it is well to bear in mind that operation is the prime factor—everything else secondary.

So far, everything mentioned has been more or less a daily routine. However, there is the very important duty of keeping equipment in good mechanical condition. All wedge type bearings should be keyed up regularly by the operator with the assistance of the oiler and all rods kept properly packed. Running conditions of the pumping units should be kept as nearly perfect and as safe as possible at all times. This requires thought and attention from both the op-

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1929 NATURAL GASOLINE OUTPUT TOTALED 2,195,400,000 GALLONS

The natural gasoline production in United States for 1929 totaled 2,195,400,000 gallons, according to the latest report of the Bureau of Mines which covered operations for December with preliminary figures for all of 1929.

This production figure represented an increase of 419,400,000 gallons or 23.6 per cent over 1928. This was a record yearly gain in the history of the natural gasoline industry. The year started with natural gasoline stocks totaling 25,500,000 gallons and ended with 25,362,000, showing that all of the production was shipped from the plants of the manufacturers.

The increased production of three states accounted for practically all of the gain in 1929. The 1929 production of California totaled 804,200,000 gallons or 37 per cent of the entire output in the United States. This 1929 total represented an increase of 259,200,000 gallons or 47.5 per cent over 1928.

Texas was second in total gain with an increase of 91,300,000 gallons or 27.6 per cent over the previous year. Oklahoma and Kansas considered as one area were third with a gain of 58,300,000 gallons or 9 per cent over 1928. The total gain of California, Texas, Oklahoma and Kansas was 408,600,000 gallons. The four states in 1929 produced 1,936,800,000 gallons or 88 per cent of the total output in the United States.

The following table summarizes the December, 1929, report on natural gasoline plant operations:

NATURAL GASOLINE, DECEMBER, 1929
(Thousands of gallons)

	Natural gasoline: Production: Dec., 1929	Nov., 1929	Dec., 1928	Jan.-Dec., 1929	Stocks end of month: Dec., 1929	Nov., 1929	Blended motor fuel, December, 1929: Natural gasoline used	Naphtha or other oils used	Stocks end of month
Appalachian	10,300	9,400	10,600	101,600	2,709	2,603	81	94	235
Illinois, Kentucky, etc.	1,400	1,300	1,500	13,800	310	255	1	2	9
Oklahoma	54,600	55,600	57,000	676,500	9,132	7,509	1,030	872	216
Seminole, etc.	25,200	27,400	25,500	344,900	2,575	2,504	254	258	66
Osage County	7,300	7,800	8,100	84,500	2,099	1,041	2	1	3
Rest of State	22,100	20,400	23,400	247,100	4,458	3,964	774	613	147
Kansas	2,800	3,100	3,300	33,800	545	658	29	3	7
Texas	40,000	40,900	31,200	422,300	9,304	6,837	441	778	145
Panhandle	20,100	20,800	12,300	183,800	4,732	3,317	293	531	47
North Texas	4,200	4,200	4,200	48,400	1,141	949	24	26	19
West Central	12,300	12,600	13,200	151,300	2,918	2,153	79	151	73
Rest of State	3,400	3,300	1,500	38,800	513	418	45	70	6
Louisiana	6,300	6,100	5,100	63,400	1,007	918	14	15	7
Arkansas	2,600	2,700	2,700	32,300	291	329	227	236	57
Rocky Mountain	4,100	3,900	3,800	47,500	547	628	....	....	...
California	65,100	66,200	49,800	804,200	1,517	1,846	....	....	...
Long Beach	15,100	15,800	17,900	227,800	....	....	....	....	..
Ventura Avenue	5,400	6,300	5,500	76,600	....	....	....	....	..
Seal Beach	3,300	3,300	2,400	41,300	....	....	....	....	..
Huntington Beach	3,700	3,600	3,900	41,900	....	....	....	....	..
Santa Fe Springs	19,200	18,300	5,900	222,300	....	....	....	....	...
Rest of State	18,400	18,900	14,200	194,300	....	....	....	....	...
Total (gallons)	187,200	189,200	165,000	2,195,400	25,362	21,583	1,823	2,000	676
Daily average	6,040	6,310	5,320	6,010	....	....	....	....	...
Total (barrels)	4,457	4,504	3,929	52,271	604	514	43	48	16
Daily average	144	150	127	143	....	....	....	....	...

Who's Who
IN NATURAL GASOLINE MANUFACTURE

Hope Construction & Refining Co.

The Hope Construction & Refining Co. of Pittsburgh, Pa., a subsidiary of the Standard Oil Co. of New Jersey, is one of the oldest manufacturers of natural gasoline and with 22 plants has the largest output east of the Mississippi River.

The company is a producer of crude oil in West Virginia, Ohio and Pennsylvania and its gasoline plants are scattered in those States, the bulk of the output being in West Virginia. As a pioneer in the natural gasoline field its manufacturing department has kept pace with the progress in the design and operation of plants.

Either alone or in conjunction with other companies considerable research work has been carried on and as a result special products have been developed on a commercial scale. In equipment the company operates plants of the oil absorption, charcoal absorption and compression types. While most of the plants are relatively small in capacity compared to some of the major units in the Mid-Continent and California fields, the company does operate a 40,000-gallon plant at Pine Grove, W. Va., and a 20,000-gallon plant at Brave, Pa.

The headquarters for the natural gasoline department are located at the general offices, 545 William Penn Way, Pittsburgh, Pa. L. L. Tonkin is superintendent of the natural gasoline plants. A. G. Hoge is sales manager.

Following is a list of the company's plants:

Location in field—	Daily plant capacity gallons
Sistersville, W. Va.	400
Bristol, W. Va.	8,000
Barren Creek, W. Va.	12,000
Ellenboro, W. Va.	300
Spencer, W. Va.	1,000
Farmington, W. Va.	15,000
Sistersville, W. Va.	1,000
Mount Clair, W. Va.	2,500
Pine Grove, W. Va.	40,000
Littleton, W. Va.	15,000
Sistersville, W. Va.	1,500
Waverly, W. Va.	5,000
Middlebourne, W. Va.	400
Rachel, W. Va.	10,000
Fly, Ohio	300
New Matamoras, Ohio	1,200
New Matamoras, Ohio	200
Brave, Pa.	20,000
Imperial, Pa.	3,600
McKeesport, Pa.	2,600
Mayport, Pa.	1,500
Yatesboro, Pa.	900
Total	142,400

STANDARD BUILDS SECOND KETTLEMAN HILLS PLANT

LOS ANGELES, Calif., Feb. 1.—The Standard Gasoline Co. (Standard Oil Co. of California) is rushing the completion of its second natural gasoline plant in the Kettleman Hills Field of California. The company's No. 11 plant, its first in the Kettleman Hills Field, is now operating with gas obtained from its No. 8 well.

The new plant will have a capacity of 130,000,000 feet of gas daily operating with a well pressure of 450 pounds. This plant will serve the area in which it is located and additional capacity will be provided as needed. The plant will be in operation early in March.

The new plant will be on Section 2-22-17 in the heart of operations in the Kettleman Hills north dome. It will cost approximately $500,000 and is expected to be ready for operation within a few months.

The plant on Section 2 is used to handle production from well No. 8 on Section 1, which was brought in last December and which is now turning out approximately 100,000,000 cubic feet of wet gas daily. The new plant will be used to handle production from No. 81 well on Section 2. This well is already in the oil zone and can be brought in at will.

Completion of this plant will give Kettleman Hills a total of four large gasoline absorption plants, all operating at approximately full capacity.

PHILLIPS INSTALLING OKLAHOMA CITY PLANT

The Phillips Petroleum Co. has started construction of its first natural gasoline plant in the Oklahoma City Field of Oklahoma. The plant which is located NW NW SW, Section 32-11n-2w, will have an initial capacity of 50,000,000 feet of gas daily.

The company later expects to enlarge the capacity. The company owns or has contracted for 4,600 acres of producing and potential gas reserves surrounding the plant. The plant will operate with well pressure and it is expected that it can be completed within 60 days.

When completed the company will have 45 plants in operation in the Mid-Continent Field. During 1929 the company's plants produced 220,000,000 gallons of natural gasoline or approximately 10 per cent of the total production in the United States.

ONE KILLED IN EXPLOSION

One man was fatally injured and several others were seriously burned when the new gasoline plant of the Petroleum Securities Co. located in the Kettleman Hills area of California was partially destroyed by fire, January 30. The plant had only been in operation a few days when an explosion followed by fire occurred. The cause of the explosion is not known.

Charles L. Phillips, night foreman, died from burns shortly after the explosion. Several other employers were injured. The plant was damaged by fire and considerable gasoline in storage was lost. The plant was operating with gas obtained from what is known as the Felix well.

MADE PRESIDENT

At a meeting of the board of directors in Chicago, Charles C. Toomey was elected president and general manager of the Midco Oil Co. Mr. Toomey has been in active charge of all operations of the company during the past two years.

Brief Items for Petroleum Refiners

E. E. HADLICK ELECTED ASSOCIATION SECRETARY

Elwin E. Hadlick of Minneapolis, Minn., who has been appointed secretary of the Northwest Petroleum Association, succeeding his brother Paul E. Hadlick

Elwin E. Hadlick

who resigned to become secretary of the Marketing Division of the American Petroleum Institute.

Mr. Hadlick previously had been counsel for the association and has been associated with his brother in the work of the association for several years. He will have his headquarters at 638 Builders Exchange, Minneapolis, Minn. Mr. Hadlick is a graduate of Georgetown University and is a member of the bar in Minnesota.

TO OPERATE COMBINATION REFINERY AT OGDEN, UTAH

DENVER, Colo., Feb. 3.—The Jenson Coal Products Co., of Salt Lake City, Utah, is building a refinery at Ogden, Utah, which will run on distillates from plants operating under the Jenson patents for the low temperature carbonization of coal, the distillates being used with an equal quantity of crude oil coming from Colorado and a part of Wyoming. The stills at Ogden are of the usual horizontal type of which there will be for the present six stills having a capacity of approximately 350 bbls. per day each.

The Jenson company is the owner of the Jenson patents for the low temperature carbonization of coal as well as the refinery at Ogden. Operating licenses have been granted to the Utah Cokoal Co. and the Triple Fuel Corp., of Salt Lake City, and the Jenson Smokeless Fuel Co., of Boise, Idaho. These companies will use the Dual Gas process in the production of smokeless coal and by-products. The process, according to President J. B. Jenson, does not yield either coke or coal tar, but does produce a high grade 100 per cent smokeless coal and petroleum. The petroleum is capable of being refined into the usual petroleum products.

SHUT DOWN REFINERY

The Bluebonnett Oil Refining Co. has shut down its refinery at Wickett, Tex. The plant has a capacity of 5,000 bbls. daily.

STANDARD OF NEW YORK EXPLAINS FUTURE POLICY COVERING PRICES

The Standard Oil Co. of New York on February 1 made effective its new schedule of gasoline tank wagon and service station and kerosene tank wagon prices in New York and New England states. The company had previously announced its plans which are in line with the policy recently adopted by the Standard Oil Co. of New Jersey for the southeastern states.

In full-page advertisements appearing throughout their marketing territory the New York Standard stated: "The Standard Oil Co. of New York will apply to the gasoline business the same principle which has worked so satisfactorily in the automobile business. When you buy an automobile, you pay a factory cost plus a fixed handling charge plus actual freight cost to your community. Effective February 1 you will buy Socony the same way. All prices will be based on the prevailing bulk price at Seaboard. The retail price will be determined by adding to the bulk price a fixed charge to cover handling and profit plus the actual rail cost to each community figured to a tenth of a cent. The new price signs on all Socony pumps will show the price in tenths of a cent a gallon."

The company will recognize four base points. These are New York harbor, Providence, Boston and Portsmouth, Me. In western New York State the prevailing market in Pennsylvania will affect the price schedule. Under the new schedule prices were reduced at most points.

In explaining its action the New York Standard issued the following statement:

"For years gasoline prices in many sections of the country have been chaotic. Local competitive conditions have caused prices to vary in different neighborhoods. At times comparatively wide variations have existed between nearby communities, causing the public to be confused and the dealer and the manufacturer have all suffered from these unsettled conditions.

"Beginning February 1, the Standard Oil Co. of New York will inaugurate a new price program, which should prove of direct benefit to New York and New England. The base price will be determined by the prevailing market price for bulk deliveries at Seaboard prices and to this will be added actual freight to each individual community, plus a fixed charge for handling and profit.

"The costs will be figured to tenths of a cent and Socony prices will hereafter be quoted in tenths of a cent. Furthermore, the retail price of the Standard Oil Co. of New York throughout its territory will at all times be maintained at a narrow differential above the prevailing tank car price offered in that community."

OLD DUTCH REFINING ADDING SHELL STILLS

MUSKEGON, Mich., Feb. 1.—The Old Dutch Refining Co., largest of three refineries operating on crude produced in the Muskegon Field, shut down January 22 for 30 to 45 days to install new shell still equipment. The Old Dutch plant represented a total investment of about $300,000 in addition to about $100,000 for a pipe line to the Muskegon Field. Additional equipment costing about $100,000 is to be installed.

The company has been unsuccessful in making naphtha, the desired product, with the present equipment so decided to spend another $100,000 to install shell stills in hopes that they will be able to produce naphthas.

During the shutdown, the Simrall Pipe Line Corp., from whom the company has been purchasing a large part of its crude supply, will run crude into storage for the Old Dutch Co., and will pay producers for their crude.

W. K. EVANS ADVANCED

CHICAGO, Feb. 1.—Announcement will shortly be made of the promotion of W. K. Evans, for many years manager of the Chicago division of the Shell Petroleum Corp. to the new position of regional director. The new director will have charge, as soon as the arrangements have been completed, of all territory east of the Mississippi River and north of the Ohio River extending to the east to Buffalo where the eastern regional director takes control. Formal announcement has not been made but the change has been current in the industry for some weeks.

RESUME PLANT OPERATION

The Houston Oil Co. of Texas has resumed operations at its Camden, Ark., refinery. The plant was shut down for several months late in 1929. The plant will be operated on a basis of approximately 3,000 bbls. daily.

DROP FEDERAL GRAND JURY INVESTIGATION

SAN FRANCISCO, Calif., Feb. 1.—The Federal grand jury investigation of alleged violations of the Sherman anti-trust law in gasoline price fixing has been postponed indefinitely. Nation wide attention was attracted recently when the Federal district attorney announced that acting on instructions from the attorney general's department at Washington, D. C., a grand jury investigation would be made of the activities of practically all of the large marketing organizations in California.

It is now announced that the criminal proceedings will be dropped and a civil suit in equity will be filed in the near future enjoining all of the alleged unlawful practices.

ENLARGE EMPIRE REFINERY

The Empire Oil Works has let contracts for the enlargement of its refinery at Reno, Pa. Additional still equipment is to be installed and other improvements made, the expenditures totaling $100,000. The plant of the Tidioute Refining Co. at Tidioute, Pa., is also to be improved. Both companies are controlled by the Wolverine-Empire Refining Co. which was recently formed through a merger of the Empire Oil Works and the Wolverine Lubricants Co.

W. J. DUNCAN TRANSFERRED

CHICAGO, Feb. 1.—W. J. Duncan, assistant manager at Minneapolis for the Standard Oil Co. of Indiana, has been transferred to Chicago where he succeeds Ross Smith as assistant manager of the Chicago district. Mr. Smith has been transferred to the Pan American Petroleum & Transport Corp. Mr. Duncan has been with the Standard Oil Co. of Indiana since 1916 during which time he has been a sales executive at Milwaukee, LaCrosse, South Bend and Minneapolis.

WORMHOUDT IS NAMED RETAIL SALES MANAGER

H. E. Wormhoudt, who has been in charge of the Des Moines division office of the Independent Oil & Gas Co. has been transferred to the Tulsa headquarters of the company where he will be sales manager of the retail sales department. Announcement of the appointment was made by O. L. Cordell, vice president in charge of sales.

Mr. Wormhoudt has been engaged in oil marketing for the last 16 years. Previously he was engaged in the railroad business and was general agent of the Burlington Railroad at Des Moines when he resigned to enter the oil business.

For 12 years he was in charge of the Des Moines division of the Manhattan Oil Co. which last year was merged with the Independent company. Mr. Wormhoudt has been active in Iowa association work and is widely known by the jobbing fraternity of the Middle West.

R. O. Fowler has been appointed acting manager of the Des Moines division to succeed Mr. Wormhoudt.

MAGNOLIA TAKES OVER FORT WORTH REFINERY

The Magnolia Petroleum Co., effective February 1, took over the operation of the Fort Worth, Tex., refinery of the White Eagle Oil Corp. The action followed the recent merger of the White Eagle and the Standard Oil Co. of New York.

The Magnolia company is also a subsidiary of the Standard Oil Co. of New York and has operated five refineries in Texas for several years. One of these refineries is located at Fort Worth. The company has not announced whether it expects to operate both Forth Worth refineries indefinitely.

The White Eagle corporation which has been reorganized as a subsidiary of the Standard Oil Co. of New York will continue to operate its Augusta, Kans., and Casper, Wyo., refineries.

G. A. STEELE RESIGNS

G. A. Steele who has been prominent in Nebraska marketing circles for several years has resigned as division manager of the Independent Oil & Gas Co. effective March 1. For 20 years, Mr. Steele was head of the Manhattan Oil Co., independent jobbing concern. He became connected with the Independent company when the two concerns were merged.

Mr. Steele will devote his time to private business. He will be succeeded in the Independent organization by his brother W. E. Steele.

CALIFORNIA CONSOLIDATION

NEW YORK, Feb. 3.—The Texas Company will consolidate five California subsidiaries acquired through the California Petroleum Corp. during the past several years, it is learned here. The companies involved are the Oak Ridge Oil Co., Gato Ridge Oil Co., California Gasoline Co., Santa Paula Oil Co. and the Red Star Petroleum Co. The consolidation will be effected to reduce overhead charges.

DETROIT GASOLINE CONTRACT

DETROIT, MICH., Feb. 3.—The Sun Co. was awarded the contract for supplying the Detroit fire department with gasoline for six months. The company's bid of 18.8 cents including tax of 3 cents. The Standard Oil Co. of Indiana and several other companies bid 20.8 cents.

ROCKY MOUNTAIN AREA

(Continued from Page 130)

and the Kotops well is fishing for a string of tools.

Production

Daily average pipe line runs from the various pools in the Rocky Mountain area for the week ending February 1 follows:

WYOMING	
Salt Creek	33,570
Frannie	....
Big Muddy	2,000
Oregon Basin	3,850
Dutton	....
Elk Basin	810
Ferris	20
Grass Creek	1,900
Hamilton	760
LaBarge	2,330
Lance Creek	180
Lost Soldier	3,240
Osage	890
Poison Spider	1,110
Rock River	2,310
Rex Lake	90
Lander	500
Simpson Ridge	50
Teapot Dome	40
Greybull	....
Total	53,650
MONTANA	
Cat Creek	1,160
Kevin-Sunburst	5,940
Pondera	2,170
Lake Basin	70
Total	9,340
COLORADO	
Moffat	986
Fort Collins	1,814
Florence	402
Iles	1,017
Tow Creek	583
Boulder	25
Rangley	100
Total	4,927
NEW MEXICO	
Artesia	867
Cap Rock (Maljamar)	1,066
Hogback	410
Rattlesnake	527
Table Mesa	112
Jal	1,377
Hobbs High	1,089
Getty	78
Lea	4,822
Miscellaneous	380
Total	10,718
Grand total	78,635

OPERATOR RESPONSIBLE FOR REGULAR INSPECTION

(Continued from Page 131)

erator and oiler and frequent consultations should be held between them.

There is another decidedly important duty for the operator—that of developing his oiler into a relief operator. No set rule can be followed here because of the difference in human nature. However, any false ideas the oiler has should be corrected by the operator but the latter should be sure that they really are false and not just a departure from a standard he, himself has followed, which may or may not be good. The oiler should be informed of any and all changes in plant operation at the same time explaining to him why such a change was made and what results are obtained.

The operator should also be sure that every member of his crew does his work with the idea of safety uppermost in his mind.

Just before going off duty the operator makes out the log for his tour. He should make sure that he is putting down everything essential to records. Occasionally items are left off the log sheets that should be entered. When making the last round of the plant, before being relieved by the succeeding operator, he should make everything shipshape as possible or in other words "Do unto the other as though he himself were that other."

—From the Booster.

OKLAHOMA REFINED MARKET MARKS TIME

(Continued from Page 28)

tion in the market generally. Large quantities of California gasoline are being brought around to the East Coast where it competes directly with gasoline from East Coast and Gulf Coast refiners. Indirectly this competition has been felt by Mid-Continent, Middle West and other refiners serving inland consuming areas.

Despite the low prices, refiners as a unit made practically no change in their gasoline output in December and as a result over 5,000,000 bbls. were added to storage a record increase in additions to monthly inventories. Some reductions have been made in crude oil runs to stills but the large gain in gasoline yields due to enlarged cracking facilities, higher gravity crude oils and natural gasolines have largely offset this decline so far as gasoline production is concerned.

MID-CONTINENT REFINERY OPERATIONS

(Data given in thousands of barrels)

	Crude run to stills			Gasoline production			Gasoline stocks†		
	Dec., 1929	Nov., 1929	Dec., 1928	Dec., 1929	Nov., 1929	Dec., 1928	Dec., 1929	Nov., 1929	Dec., 1928
Oklahoma, Kansas, etc..	9,558	9,689	9,369	5,227	5,312	5,182	4,123	3,249	3,691
Texas*	4,393	4,631	4,363	1,971	2,023	1,651	1,335	1,182	800
Louisiana-Arkansas*	1,838	1,916	2,096	684	770	621	307	253	179
Total	15,789	16,236	15,828	7,882	8,105	7,454	5,765	4,684	4,670

*Except Gulf Coast. †End of month. Data based on Bureau of Mines reports.

Mid-Continent Situation

The Mid-Continent situation in regard to gasoline is summarized in the accompanying table. As has been pointed out in previous months Oklahoma and Kansas refiners have maintained their plant operations on what has been termed a "sane basis." Their crude runs to stills were less in December than in November and practically the same as in December, 1928. Stocks increased almost 1,000,000 bbls. in December but at the start of January they were only 500,000 bbls. greater than on the same date of the previous year.

Restricted in their market outlets by the abnormal expansion in gasoline output of Middle Western refiners and other areas, these Oklahoma and Kansas refiners have not been able to benefit by their conservative operations and due to the unbalanced situation which has developed in regard to crude oil, refinery tank car and retail prices have probably suffered more than any other group of refiners.

Gasoline and Naphtha

A few refiners who have pursued a policy of moving their current output have been forced to give additional price concessions in their sales of U. S. Motor gasoline. A price of 5¾ cents seems to be the generally accepted low of the market although a few sales were made under that figure. Several refiners continue to quote 6½ cents and this is the basis on which most of the contract material is moved.

The same wide range in prices exists in the higher gravities. Deliveries were started last week on the February orders and several refiners are not offering shipments on the domestic market. There is sufficient material available from other refiners to keep prices depressed. With cheap natural gasoline available several refiners are shipping 60-62 gravity gasoline on their U. S. Motor orders and there is usually no difference in the prices quoted for the two grades.

Resale 60-62 400 endpoint gasoline sold as low as 5⅞ cents with a general market range of 6 to 6¼ cents. The 64-66 390 for domestic shipment was available as low as 6½ cents and sales of 64-66 375 endpoint at 7 cents were reported.

Sales of naphtha are largely confined to Oklahoma buyers with no change in prices.

Kerosene and Distillate

Sellers are hopeful that the spring demand for kerosene will get under way before the end of the month and they are refusing additional price concessions until they can determine what will develop.

Furnace oil distillates are very weak. Some of the sellers feel that the season is practically over so far as a refinery market is concerned and they have been dumping at distress prices. This is particularly true of a few refiners in the Middle West. They have a freight rate advantage and Oklahoma refiners state that they would have to take around 3⅛ to 3¼ cents for 36-38 and 38-40 low cold test and low flash material if they were to compete.

Fuel Oil and Gas Oil

Fuel oil and gas oil prices have not as yet shown the weakness predicted by some for February. The competition of the Refugio and Luling crudes of Texas has lessened the demand for the high gravity grades and a few refiners have reduced their price on 28-30 and 30-32 fuel oil. This weakness, however, is still not generally apparent in Oklahoma. The low gravity grades are strong and firm in price.

Gas oil prices are steady. The low cold test low flash grades suitable for furnace oil are practically all contracted and the demand for the dark color and U.G.I. material has been steady.

Natural Gasoline

Although there did not appear to be much material available at the low price, Grade AA was quoted on Tuesday at a price range of 5 to 5¼ cents and Grade A at 5⅝ to 5¾ cents. The Grade B sold at 4¼ to 4½ cents and remaining grade at 4 to 4¼ cents.

Lubricants and Wax

There is still very little activity in the spot market on lubricants and wax. What shipments being made are largely on contracts or to regular customers where wide differences of opinion in regard to prices between buyers and sellers does not exist. Several sellers state that they are well taken care of for February by their contracts. Price ranges on the several products are unchanged and are largely nominal.

No Price Statement Is Contemplated by Standard of N. J.

NEW YORK, Feb. 4.—Standard Oil Co. of New Jersey officials have thus far failed to make any further statement defining the company's crude oil pricing policies and it was stated at the company's offices today that none is contemplated. Walter C. Teagle, president, returned yesterday after a week's absence and is reported to have conferred with other company officials on the situation developed by the action of Jersey subsidiaries in cutting crude schedules. W. S. Farish, president, Humble Oil & Refining Co., was expected to come to New York with Mr. Teagle following their hunting and fishing trip but thus far has not arrived. Unofficially it is reported that New Jersey does not contemplate restoring old crude schedules because even with radical crude output curtailment many months will be required to establish balance between supply and demand, and because the company, which purchases approximately 50 per cent of its crude requirements, is not justified in the interest of its stockholders in paying crude prices that might render its refining operations unprofitable.

K. R. Kingsbury, president, Standard Oil Co. of California, is here reputedly for discussion of the situation on the West Coast.

W. S. Fitzpatrick, chairman of the board, Prairie Oil & Gas Co., is holding further conferences with Sinclair officials on details of consolidation of two companies. A number of prominent Mid-Continent operators are also in New York but nothing in the nature of a formal meeting has been held.

JOSEPH PLANTE, FRIEND OF MANY OIL MEN, DEAD

OIL CITY, Pa., Feb. 3.—Joseph A. Plante, who for more than half a century had made custom shoes for men in the oil industry, died here last week. Mr. Plante, who was born in Damase, Quebec, 84 years ago, passed his boyhood in Mooers, N. Y., and at the age of 18, when oil excitement was high in Pithole, near here, he joined the crowd that flocked to that place. From there he went to Petroleum Center and with the decline of Petroleum Center he came to Oil City, where he since had resided.

Mr. Plante learned the shoemaking trade in his youth and for more than 60 years he followed it. Early oil men of this region went to him for their shoes and in this way he developed many personal friendships which continued throughout life. Oil men who won high place in the industry continued to have him do their work even after they had gone to other places and he made shoes for the same persons for 50 years.

As a member of the Catholic church choir in Pithole Mr. Plante met Miss Margery Anne Corrigan, also a member of the choir. They were married three years later. Mr. Plante continued to sing in choirs and in Petroleum Center he would close his shop to sing the requiem masses. On coming to Oil City he joined the choir of St. Joseph's church and he sang in it until two years ago. He was a member of the Elks, among whom he was affectionately known as "Pappy."

Mr. Plante leaves his wife, three sons and three daughters. He leaves also one brother, Alexander R. Plante.

DE LUCE PROMOTED

Frank De Luce

Promotion of Frank W. De Luce to the post of division manager, with headquarters at Tulsa, has been announced by L. M. Johnston, executive vice president of the A. M. Byers Co., manufacturers of wrought iron pipe. Mr. De Luce's promotion is part of a nation-wide reorganization and expansion of the Byers sales and distributing facilities. The expansion of manufacturing represented by Byers' new $10,000,000 plant just north of Ambridge, Pa., is nearing completion rapidly.

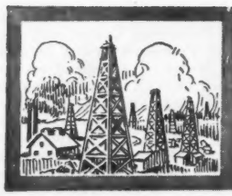
Mr. De Luce's territory comprises the State of Oklahoma, also the State of Kansas for oil country goods only.

DEATH OF CHARLES P. BRANT

Charles P. Brant, one of the old-timers in the oil industry, whose most recent operations were in the Saginaw and Muskegon Fields of Michigan and the Owensboro Field of Kentucky died at his home in Indianapolis, Ind., January 30. Mr. Brant was 74 years old and had spent more than 50 years in the oil industry as a driller and contractor. He is credited with opening the Osage National Field near Bartlesville, Okla., while drilling for Cudahy, the packer. He also drilled at one time for T. N. Barnsdall, one of the pioneers in the oil industry.

FRANCIS COLE PRATT DEAD

Francis Cole Pratt, 63, former vice president and chairman of the manufacturing committee of the General Electric Co., died January 26 in New York after an illness of six weeks.



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

GASOLINE AND NAPHTHA

OKLAHOMA (Group 3)—	Feb. 4		Jan. 28		Jan. 21	
50-52 450 endpoint	.06¼		.06¼		.06¼	
56-58 450 endpoint	.06	.06¼	.06	.06¼	.06	.06¼
*58-60 437 endpoint (U. S. Motor)	.0655		.0658		.0653	
*60-62 437 endpoint	†.06¼	.06½	.0663		†.06¼	.06¾
*60-62 400 endpoint	.0717		.0725		.0696	
*64-66 375 endpoint	†.07¼	.08	.08		.08	
68-70 360 endpoint	.07½	.08	.07⅝	.08	.07¾	.08
64-66 437 endpoint (blend)	.06	.06½	.06	.06½	.06½	.06¾

*Weighted average prices February 3, January 27 and 20, as reported by representative refiners. Sales to jobbers only. †No sales reported. Price shown as general market.

NORTH TEXAS—						
56-58 450 endpoint	.05¾	.06	.05¾	.06	.06	.06¼
58-60 450 endpoint	.05¾		.06		.06	
58-60 437 endpoint (U. S. Motor)	.05¾	.06⅛	.06	.06¼	.06	.06¼
60-62 400 endpoint	.06⅛	.06¼	.06¼		.06¼	.06½
64-66 390 endpoint	.06¾	.07	.07	.07¼	.07	.07¼
64-66 375 endpoint	.07⅛	.07¼	.07¼	.07½	.07¼	.07½
68-70 360 endpoint	.07½	.07¾	.07½	.08	.07½	.08
64-66 437 endpoint (blend)	.06	.06½	.06	.06½	.06½	
*NORTH LOUISIANA—						
58-60 437 endpoint (U. S. Motor)	.06¾		.06¾	.07	.06¾	.07
*ARKANSAS—						
58-60 437 endpoint (U. S. Motor)	.06¾		.06¾	.07	.06¾	.07
PENNSYLVANIA—						
52-54 Naphtha	.07	.07¼	.07	.07¼	.07¼	.07½
54-56 Naphtha	.07	.07¼	.07	.07¼	.07¼	.07½
58-60 Gasoline	.07½	.07¾	.07½	.07¾	.07½	.07¾
60 Gasoline	.07¾	.08	.07¾	.08	.07¾	.08
62 Gasoline	.07¾	.08	.07¾	.08	.07¾	.08
64 Gasoline	.08¼	.08½	.08¼	.08½	.08¼	.08½
68-70 350 endpoint gasoline	.09¼	.09½	.09¼	.09½	.09¼	.09½
CALIFORNIA—						
58-60 437 endpoint (U. S. Motor) domestic	.09	.10	.09	.10	.09.	.10
CHICAGO DISTRICT (Based on Group 3)—						
50-52 450 endpoint (Naphtha)	.06¼		.06¼	.06½	.06⅜	.06⅝
56-58 450 endpoint	.05¾	.06	.05⅞	.06⅛	.06	.06¼
58-60 437 endpoint (U. S. Motor)	.05¾	.06½	.05⅞	.06½	.06	.06½
60-62 400 endpoint	.06¼		.06¼	.06½	.06½	
64-66 375 endpoint	.07⅛	.07½	.07¼	.07½	.07½	.07¾
68-70 360 endpoint	.07¾	.08	.07¾	.08	.08	.08¼
64-66 437 endpoint (blend)	.06¼	.06½	.06½		.06½	
GULF COAST (Export)—						
58-60 (U. S. Motor)	.08½		.08½		.08½	
60-62 400 endpoint	.09½		.09½		.09½	
61-63 390 endpoint	.09¾		.09¾		.09¾	
64-66 375 endpoint	.10		.10		.10	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

NATURAL GASOLINE

OKLAHOMA (Group 3)—	Feb. 4		Jan. 28		Jan. 21	
Grade A, 72-79.9, 375 e.p., rec. 90%	.05⅝	.05¾	.05⅝	.05¾	.05¼	.05½
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05	.05¼	.05¼		.05	.05⅛
Grade B, 76-83.9, 375 e.p., rec. 85%	.04¼		.04½		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.04	.04⅛	.04¼		.04⅛	.04¼
Grade C, 80-90, 375 e.p., rec. 78%	.04		.04⅛	.04¼	.04	.04⅛
NORTH TEXAS—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05⅝	.05¾	.05½	.05¾	.05¼	.05½
Grade AA, 80-87.9, 375 e.p., rec. 90%	.05	.05¼	.05¼		.05	.05⅛
Grade B, 76-83.9, 375 e.p., rec. 85%	.04¼		.04½		.04½	
Grade BB, 84-92, 375 e.p., rec. 85%	.04	.04⅛	.04¼		.04⅛	.04¼
Grade C, 80-90, 375 e.p., rec. 78%	.04		.04⅛	.04¼	.04	.04⅛
NORTH LOUISIANA—						
Grade AA, 80-87, 375 e.p., rec. 90%	.05½		.05¾		.05½	
Grade BB, 84-92, 375 e.p., rec. 85%	.04½		.04¾		.04¾	
Grade C, 80-90, 375 e.p., rec. 78%	.04½		.04½	.04¾	.04½	.04¾
CALIFORNIA—						
75-78 375-390 endpoint	.08½	.09	.08½	.09	.08½	.09
CHICAGO DISTRICT (Based on Group 3)—						
Grade A, 72-79.9, 375 e.p., rec. 90%	.05¾		.05½	.05¾	.05½	
Grade AA, 80-87, 375 e.p., rec. 90%	.05	.05¼	.05¼		.05	
Grade B, 76-83.9, 375 e.p., rec. 85%	.04½		.04½		.04¼	
Grade BB, 84-92, 375 e.p., rec. 85%	.04⅛	.04¼	.04¼		.04⅛	.04¼
Grade C, 80-90, 375 e.p., rec. 78%	.04	.04⅛	.04	.04⅛	.04	

BURNING OIL

OKLAHOMA (Group 3)—	Feb. 4		Jan. 28		Jan. 21	
41-43 water white kerosene	.04	.04¼	.04	.04¼	.04	.04¼
42-44 water white kerosene	.04¼	.04½	.04⅜	.40⅝	.04⅜	.04⅝
NORTH TEXAS—						
41-43 water white kerosene	.04		.04		.03⅞	.04
40-42 water white kerosene	.03⅞	.04	.03⅞	.04	.03¾	.03⅞
*NORTH LOUISIANA—						
41-43 water white kerosene	.05		.05	.05¼	.05	.05¼
*ARKANSAS—						
41-43 water white kerosene	.05		.05		.05	.05¼
PENNSYLVANIA—						
43 Kerosene prime white	.05¾	.06	.05¾	.06	.05¾	.06
45 Kerosene water white	.06	.06¼	.06	.06¼	.06	.06¼
46 Kerosene water white	.06½	.06¾	.06¾	.06⅞	.06¾	.06⅞
47 Kerosene water white	.06½	.06¾	.06¾	.07	.06¾	.07
300 Mineral Seal	.07	.07¼	.07	.07¼	.07	.07¼
CALIFORNIA—						
38-40 water white Kero. (high burning test)	.05	.05½	.05	.05½	.05	.05½
Engine distillate, 43-44, 445 endpoint	.07	.07½	.07	.07½	.07	.07½
Engine distillate, 42-44, 480 endpoint	.06¾	.07¼	.06¾	.07¼	.06¾	.07¼
CHICAGO DISTRICT (Based on Group 3)—						
41-43 water white kerosene	.04	.04¼	.04	.04¼	.04	.04¼
42-44 water white kerosene	.04¼	.04¾	.04¼	.04½	.04¼	.04¾
GULF COAST (Export)—						
41-43 prime white	.07		.07		.07	
41-43 water white	.08		.08		.08	

*Louisiana, Arkansas, Mississippi and East Texas delivery.

FUEL OIL

OKLAHOMA (Group 3)—	Feb. 4		Jan. 28		Jan. 21	
Below 18 Fuel Oil, per bbl.	.70	.80	.70	.80	.70	.80
18-22 Fuel Oil, per bbl.	.75	.85	.75	.85	.75	.85
20-22 Fuel Oil, per bbl.	.85		.85		.85	
22-26 Fuel Oil, per bbl.	.85	.95	.85	.90	.85	.90
24-26 Fuel Oil, per bbl.	.95	1.00	90	1.00	.90	1.00
26-30 Fuel Oil, per bbl.	1.00	1.05	1.00	1.05	1.00	1.05
28-30 Fuel Oil, per bbl. (industrial)	1.10	1.20	1.15	1.20	1.15	1.20
32-36 Gas Oil (industrial)	.02¾	.03	.02¾	.03	.02¾	.03
32-36 Gas Oil (straw color)	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼
36-38 Distillate	.03¼	.03⅜	.03¼	.03½	.03¼	.03½
38-40 Straw Distillate	.03⅜	.03¾	.03½	.03¾	.03½	.03¾
NORTH TEXAS—						
Below 20 Fuel Oil, per bbl.	.60	.65	.60	.65	.60	.65
24-26 Fuel Oil, per bbl.	.85	.90	.85	.90	.85	.90
32-36 Gas Oil (straw)	.02⅝	.02¾	.02⅝	.02¾	.02¾	.03
38-40 Straw Distillate	.03⅜	.03½	.03⅜	.03½	.03⅜	.03½
*NORTH LOUISIANA—						
18-20 Fuel Oil, per bbl.	.85	.90	.80	.85	.80	.85
30-32 Gas Oil	.03¼	.03½	.03¼	.03½	.03¼	.03½
*ARKANSAS—						
33-36 Distillate	.03⅝	.04	.03⅝	.04	.03⅝	.04
30-32 Gas Oil	.03¼	.03½	.03¼	.03½	.03¼	.03½
16-22 Refinery Fuel Oil, per bbl.	.85	.90	.80	.85	.80	.85
GULF COAST (South Texas)—						
Gas Oil	.03¾	.04	.03¾	.04	.03¾	.04
Bunker C Fuel (cargo lots), per bbl.	.65	.70	.65	.70	.65	.70
Bunker C Fuel (small lots)	.95	1.00	1.00	1.05	1.00	1.05
PENNSYLVANIA—						
30-34 Fuel Oil	.04½	.04¾	.04½	.04¾	.04½	.04¾
36-40 Fuel Oil	.04¾	.05	.04¾	.05	.04¾	.05
CALIFORNIA—						
33-36 Distillate	.03½	.04	.03½	.04	.03½	.04
26-32 Distillate	.02	.02½	.02	.02½	.02	.02½
15-20 Fuel Oil, Bunker (at tidewater)	.70	.80	.70	.80	.70	.80
15-20 Fuel Oil (cargo lots), per bbl.	.60	.75	.60	.75	.60	.75
27 plus Diesel, per bbl.	.90	1.05	.90	1.05	.90	1.05
CHICAGO DISTRICT (Based on Group 3)—						
22-26 Fuel Oil, per bbl.	.90	.95	.90	.95	.90	.95
18-22 Fuel Oil, per bbl.	.82½	.85	.82½	.85	.82½	.85
28-30 Fuel Oil, per bbl.	1.12½	1.20	1.12½	1.20	1.20	1.25
32-36 Gas Oil (zero)	.03⅛	.03⅜	.03⅛	.03⅜	.03⅛	.03⅜
32-36 Gas Oil (industrial)	.02⅝	.02⅞	.02⅝	.02⅞	.02⅝	.02⅞
36-38 Distillate	.03½	.03⅝	.03½	.03⅝	.03½	.03⅝
38-40 Straw Distillate	.03⅜	.03¾	.03⅜	.03¾	.03⅜	.03¾

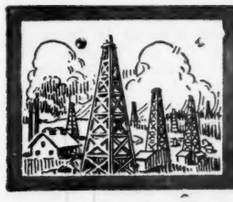
*Louisiana, Arkansas, Mississippi and East Texas delivery.

LUBRICATING OIL AND WAX

OKLAHOMA (Group 3)—	Feb. 4		Jan. 28		Jan. 21	
100 vis., 2 color, 20-25 cold test	.06¾	.07	.06¾	.07	.06¾	.07
100 vis., 3 color, 20-25 cold test	.05¾	.06	.05¾	.06	.05¾	.06
150 vis., 3 color, 20-25 cold test	.08¼	.08½	.08¼	.08½	.08¼	.08½
150 vis., 4 color, 20-25 cold test	.07¾	.08	.07¾	.08	.07¾	.08
180 vis., 3 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
180 vis., 4 color, 23-28 cold test	.09¼	.09½	.09¼	.09½	.09¼	.09½
180 vis., 5 color, 23-28 cold test	.09	.09¼	.09	.09¼	.09	.09¼
200 vis., 3 color, 23-28 cold test	.10¾	.11	.10¾	.11	.10¾	.11
200 vis., 4 color, 23-28 cold test	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 5 color, 23-28 cold test	.09¾	.10	.09¾	.10	.09¾	.10
240 vis., 3 color, 25-30 cold test	.14¼	.14½	.14¼	.14½	.14¼	.14½
240 vis., 4 color, 25-30 cold test	.13¼	.13½	.13¼	.13½	.13¼	.13½
240 vis., 5 color, 25-30 cold test	.12¾	.13	.12¾	.13	.12¾	.13
280 vis., 3 color, 25-30 cold test	.16¾	.17	.16¾	.17	.16¾	.17
280 vis., 4 color, 25-30 cold test	.15¾	.16	.15¾	.16	.15¾	.16
280 vis., 5 color, 25-30 cold test	.14¾	.15	.14¾	.15	.14¾	.15
Cylinder Stocks:						
600, steam refined, light green	.10	.12	.10	.12	.10	.12
600, steam refined, dark green	.09	.11	.09	.11	.09	.11
190-200 vis., D color Bright Stock	.41	.42	.41	.42	.41	.42
150-160 vis., D color Bright Stock	.37		.37		.37	
150-160 vis., E color Bright Stock	.32	.35	.32	.35	.32	.35
Waxes:						
124-126 White Crude Scale Wax	.02½	.02⅝	.02½	.02⅝	.02½	
PENNSYLVANIA—						
34 Neutral	.07½	.07¾	.07½	.07¾	.07½	.07¾
34 Sundebloom	.07½	.07¾	.07½	.07¾	.07½	.07¾
36 Miners' Neutral	.07¼	.07½	.07¼	.07½	.07¼	.07½
150, 3 color	.15½	.16	.15½	.16	.15½	.16
180, 3 color	.21½	.22	.21½	.22	.21½	.22
200, 3 color	.24½	.25	.24½	.25	.25½	.25
220, 3 color	.29½	.30	.28½	.29	.28½	.29
600, steam refined	.22½	.23	.22½	.23	.22½	.23
635, steam refined	.28½	.29	.28½	.29	.28½	.29
650, steam refined	.29½	.30	.29½	.30	.29½	.30
600, Pennsylvania Flash	.30½	.31	.29½	.30	.29½	.30
630, Pennsylvania Flash	.34½	.35	.34½	.35	.34½	.35
600, E filtered	.30½	.31	.30½	.31	.30½	.31
600, D filtered	.34½	.35	.34½	.35	.34½	.35
Pennsylvania Bright Stocks	.41	.42	.41	.42	.41	.42
*122-124 White Crude Scale Wax	.03	.03⅛	.03	.03⅛	.03	.03⅛
*124-126 White Crude Scale Wax	.03⅛	.03¼	.03⅛	.03¼	.03⅛	.03¼

*At New York.

GULF COAST (South Texas)—						
No. 2 color, 100 vis., pale oil	.06¼	.06½	.06	.06½	.06	.06½
No. 3 color, 200 vis., pale oil	.09¼	.09½	.08½	.09	.08½	.09
No. 3 color, 300 vis., pale oil	.10¾	.11	.09¾	.10	.09¾	.10
No. 3½ color, 500 vis., pale oil	.11½	.12	.11	.11½	.11	.11½
No. 4 color, 750 vis., pale oil	.13¼	.13½	.12	.13	.12	.13
No. 5 to 6 color, 200 vis., red oil	.08½	.08¾	.07	.08	.07	.08
No. 5 to 6 color, 300 vis., red oil	.09½	.10	.08½	.09	.08½	.09
No. 5 to 6 color, 500 vis., red oil	.10¾	.11¼	.09	.10	.09	.10
No. 5 to 6 color, 750 vis., red oil	.12¾	.13	.11½	.12½	.11½	.12½
No. 2½ color, 200 vis., pale filtered	.11	.12	.11	.12	.11	.12
No. 2½ color, 300 vis., pale filtered	.12	.13	.12	.13	.12	.13
No. 2½ color, 500 vis., pale filtered	.14½	.15	.14½	.15	.14½	.15
No. 2½-3 color, 750 vis., pale filtered	.17	.19	.17	.19	.17	.19



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement unless otherwise noted.

CALIFORNIA—

130 vis., 21–3 color	.10¼	.10½	.10¼	.10½	.10¼	.10½
200 vis., 21–3 color	.11½	.11¾	.11½	.11¾	.11½	.11¾
300 vis., 3-3½ color	.13	.13½	.13	.13½	.13	.13½
350 vis., 3½–4 color	.13½	.13¾	.13½	.13¾	.13½	.13¾
400 vis., 3½–4 color	.15	.15½	.15	.15½	.15	.15½
Red Neutral:						
200 vis., 4½–5 color	.11	.11¼	.11	.11¼	.11	.11¼
300 vis., 5-6 color	.12	.12¼	.12	.12¼	.12	.12¼
400 vis., 5-6 color	.13¼	.14	.13¼	.14	.13¼	.14
500 vis., 4½–5 color	.14¼	.15½	.14¼	.15½	.14¼	.15½
500 vis., 5-6½ color	.15	.15¼	.15	.15¼	.15	.15¼
600 vis., 6½ plus color	.16	.16¼	.16	.1¼	.16	.16¼

Note—Bright stocks are not manufactured commercially on the Pacific Coast

NEW YORK (BAYONNE) REFINERY PRICES

	Feb. 4		Jan. 28		Jan. 21	
Gasoline, U. S. Motor, 58-60, 437	.08⅝	.08¾	.08⅝	.08¾	.08⅝	.08¾
Kerosene, water white, 41-43	.07¾		.07¾		.07¾	
*Fuel Oil, Bunker "C," 14-16, per bbl.	1.05		1.05		1.05	
†Fuel Oil, Diesel, 28-30, per bbl.	2.00		2.00		2.00	
Gas Oil, 32-36 gravity	.04¾	.05¼	.04¾	.05¼	.04¾	.05¼
25 pale Paraffin Oil	.10½		.10½		.10½	
28 pale Paraffin Oil	.07¼		.07¼		.07¼	
285 red Paraffin Oil	.12½		.12½		.12½	
250 red Paraffin Oil	.11½		.11½		.11½	
225 red Paraffin Oil	.10		.10		.10	
200 red Paraffin Oil	.09¼		.09¼		.09¼	
Refined Wax:						
120-122 a.m.p., per lb.	.03⅞		.03¾		.03¾	
125-127 a.m.p., per lb.	.04⅛		.04⅛		.03⅞	
130-132 a.m.p., per lb.	.04⅝		.04½		.04⅜	
133-135 a.m.p., per lb.	.05¾		.05¾		.05⅝	
135-137 a.m.p., per lb.	.05⅞		.05⅞		.05⅞	
Petrolatum in barrels, carload lots, per pound:						
Dark Green	.01⅞		.01⅞		.01⅞	
Amber	.03⅜		.03⅜		.03⅜	
Extra Amber	.03½		.03½		.03½	
Cream	.06⅜		.06⅜		.06⅜	
Lily White	.07		.07		.07¼	
Snow White	.08⅜		.08⅜		.08⅜	

*Lighterage 5.0 cents a barrel extra.

NEW YORK (BAYONNE) EXPORT PRICES

	Feb. 4		Jan. 28		Jan. 21	
Kerosene, prime white	.07¾		.07¾		.07¾	
Kerosene, water white	.09		.09		.09	
600, steam refined cylinder stocks, in bbls.	.30	.31	.31		.31	
635, steam refined	.32	.33	.33		.33	
650, steam refined	.36	.37	.37		.37	
600, Pennsylvania Flash	.40		.40		.40	
630, Pennsylvania Flash	.43		.43		.43	
600, Warren E	.39½		.39½		.39½	
600, Oil City E	.38½		.38½		.38½	
Light 140-150 Bright Stocks	.49½	.50	.50	.51	.50	.51
Dark 140-150 Bright Stocks	.48½	.49	.49	.50	.49	.50

LOS ANGELES EXPORT PRICES

	Feb. 4		Jan. 28		Jan. 21	
Kerosene, water white	.04½	.05	.04½	.05	.04½	.05
U. S. Motor Gasoline, 53, 55, 437 e.p.	.06¼	.06¾	.06¼	.06¾	.06¼	.06¾

CRUDE OIL PRICES

OKLAHOMA, KANSAS, NORTH AND EAST CENTRAL TEXAS

Oklahoma City—Same as other Mid-Continent price schedule except Empire Pipe Line Co. posts all oil 40 gravity and above at $1.65 on November 24.

Corsicana heavy (Jan. 16, 1930)* ..... $ .70

Other fields ..... See gravity table

*Posted by Magnolia Petroleum Co.

TEXAS PANHANDLE

Gray County, Wheeler County and Carson-Hutchinson Counties—See gravity table.

WEST TEXAS

Iatan* ..... Same as North Texas

Crane-Upton-Crockett, Pecos, Winkler and Mitchell ..... See gravity table, column 3

Howard and Glasscock ..... See gravity table, column 11

Chalk† ..... $ .65

*Includes Westbrook Field.
†Posted by Humble Oil & Refining Co.

ARKANSAS-NORTH LOUISIANA

Smackover, below 24 gravity (May 20, 1929) ..... $ .85

Smackover, 24 gravity and above (May 20, 1929) 1.00

Cotton Valley, below 36 gravity (Jan. 17, 1930) ..... .80

Bellevue (Jan. 17, 1930) 1.05

Urania (May 21, 1929) 1.10

East El Dorado (May 22, 1929) ..... .85

Other fields ..... See gravity table

Cotton Valley crude about 36 gravity takes same gravity price schedule as shown for North Louisiana and Arkansas crude in Mid-Continent gravity price table.

Note—Smackover, Cotton Valley and Bellevue posted by Standard Oil Co. of Louisiana and Magnolia Petroleum Co.; Urania posted by Louisiana Oil Refining Corp.; East El Dorado, Magnolia Petroleum Co.

GULF COAST

Grade A (Jan. 15, 1930)* $1.05

Grade B ..... See gravity table

Jennings, La. (Jan. 15, 1930)† 1.00

Refugio (Jan. 20, 1930)¶ ..... .55

Sorrento (Jan. 15, 1930)‡ 1.00

Markham (Jan. 15, 1930)§ ..... .75

High Island (Jan. 15, 1930)¶ ..... .85

*Humble Oil & Refining Co. †Gulf Pipe Line Co. ‡Sun Pipe Line Co. §The Texas Pipe Line Co. ¶Posted by Gulf Coast Pipe Line Co.

ROCKY MOUNTAIN STATES

Ohio Oil Co.-Midwest Refining Co.
(Effective May 21, 1929)

Rock Creek, Wyo. $1.42

Salt Creek ..... See gravity table

Big Muddy $1.42

Grass Creek, heavy (July 27, 1928) ..... .90

Grass Creek, light 1.65

Mule Creek 1.20

Elk Basin 1.65

Lance Creek 1.68

Poison Spider (March 14, 1927) 1.00

Notches (March 14, 1927) ..... .65

Rex Lake (February 22) 1.10

Osage 1.65

Lost Soldier (contract, May 22) 1.05

Hamilton Dome (March 14, 1927) ..... .85

Pedro 1.25

Greybull 1.65

Four Bear ..... .85

Cat Creek (Montana) (July 27, 1928) .. 1.18

Sunburst (Montana) (May 23, 1929) ... 1.75

Torchlight 1.65

Hogback (New Mexico) 1.70

Note—Salt Creek, Osage, Cat Creek, Greybull and Hogback posted by Midwest Refining Co., and the remainder by the Ohio Oil Co. Both companies posted Grass Creek light and Elk Basin.

SOUTH CENTRAL AND SOUTH-WESTERN TEXAS

Darst Creek (Jan. 15, 1930)* $1.05

Luling (Jan. 16, 1930)* ..... .75

Mirando (Jan. 15, 1930)† ..... .75

(Continued on Page 136)

CRUDE OIL GRAVITY TABLE

Gravity—	Okla., Kans., N. C. Texas 1	No. La. and Arkansas 2	Crane, Upton, Crockett, Winkler & Pecos, Mitchell, (West Texas) Lea, N. Mex. 3	Stephens, Ark. 4	Wheeler (Texas Panhandle) 5	Gray County (Texas Panhandle) 6	Carson and Hutchinson (Texas Panhandle) 7	Salt Creek, Wyo. 8	Grade B and Light Crude (G. Coast) 9	Somerset (South Central Texas) 10	Howard and Glasscock, W. Tex. 11
24 and above.	....	....	....	....	....	....	....	....	....	....	....
Below 24	....	....	....	....	....	....	....	....	....	....	....
Below 25	.85	....	.55	....	....	....	....	....	.90	....	.55
25 to 25.9 ...	.90	....	.58	....	....	....	....	....	.93	....	.58
26 to 26.9 ...	.95	....	.61	....	....	....	....	....	.96	....	.61
27 to 27.9 ...	1.00	....	.64	....	....	....	....	....	.99	....	.64
Below 28	....	.78	....	.90	.70	.69	.72	....	....	....	....
28 to 28.9 ...	1.05	.84	.67	.94	.70	.69	.72	....	1.02	....	.66
29 to 29.9 ...	1.10	.90	.70	.98	.70	.75	.72	1.10	1.05	....	.68
30 to 30.9 ...	1.15	.96	.73	1.02	.76	.81	.72	1.15	1.08	....	.70
31 to 31.9 ...	1.20	1.02	.76	1.06	.82	.87	.72	1.20	1.11	....	.72
32 to 32.9 ...	1.25	1.08	.79	1.10	.88	.93	.78	1.25	1.14	1.05	.74
33 to 33.9 ...	1.30	1.11	.82	....	.91	.96	.81	1.30	1.17	1.07	.76
34 to 34.9 ...	1.35	1.14	.85	....	.94	.99	.84	1.35	1.20	1.09	.78
35 to 35.9 ...	1.40	1.17	.88	....	.97	1.02	.87	1.40	1.23	1.11	.80
36 to 36.9 ...	1.45	1.20	.91	....	1.00	1.05	.90	1.45	....	1.13	.82
37 to 37.9 ...	1.50	1.23	....	....	1.03	1.08	.93	1.50	....	1.15	....
38 to 38.9 ...	1.55	1.26	....	....	1.06	1.11	.96	....	....	1.17	....
39 to 39.9 ...	1.60	1.29	....	....	1.09	1.14	.99	....	....	....	....
40 to 40.9 ...	1.65	1.32	....	....	1.12	1.17	1.02	....	....	....	....
41 to 41.9 ...	1.70	1.35	....	....	1.15	1.20	1.05	....	....	....	....
42 to 42.9 ...	1.75	1.38	....	....	1.18	1.23	1.08	....	....	....	....
43 to 43.9 ...	1.80	1.41	....	....	1.21	1.26	1.11	....	....	....	....
44 and above.	1.85	1.44	....	....	1.24	1.29	1.14	....	....	....	....

Column 1. Note—Above prices still observed by Prairie Oil & Gas Co., Sinclair Oil & Gas Co. and Gypsy Oil Co., as established May 20, 1929. On January 15, 1930, Humble Oil & Refining Co. posted North Central Texas crude at following prices: Below 25 gravity 60 cents; a 6-cent differential added per degree to 32-32.9 gravity at $1.08 and a 3-cent differential above making 44 gravity and above at $1.44. The Carter Oil Co. posted this schedule for Oklahoma and Kansas January 16. Same date Magnolia posted these prices in North Central Texas. On January 17 Magnolia posted the schedule for Oklahoma and Kansas.

North Central Texas—Includes Ranger, Mexia, Powell, Richland, Wortham, Lytton Springs, Currie, Nocona and Moran Counties.

Column 2—Arkansas and North Louisiana—(Caddo, Bull Bayou, Crichton, Cotton Valley above 36 gravity, DeSoto, Haynesville, Homer and El Dorado only). Texas Pipe Line Co. Jan. 15, 1930. Standard Oil Co. of Louisiana, Louisiana Oil Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co. Jan. 16, 1930.

Column 3—Humble Oil & Refining Co., Jan. 15, 1930, and Magnolia Petroleum Co., Jan. 16, 1930.

Column 4—Atlantic Oil Producing Co., Prairie Oil & Gas Co., Louisiana Oil Refining Corp., May 21, 1929.

Columns 5, 6 and 7—Humble Oil & Refining Co., Jan. 15, 1930, and Magnolia Petroleum Co., Jan. 16, 1930.

Column 8—Midwest Refining Co., May 20, 1929. All crude over 37 gravity $1.50 per barrel.

Column 9—Humble Oil & Refining Co., Jan. 15, 1930 (schedule ends 35 and above).

Column 10—Grayburg Pipe Line Co. and Pioneer Oil & Refining Co., April 7.

Column 11—Humble Oil & Refining Co., Jan. 15, 1930, Magnolia posted Howard-Glasscock crude same schedule as West Texas, Jan. 16, 1930.

CALIFORNIA CRUDE OIL PRICES

Standard Oil Co.-Union Oil Co. (Effective January 18, 1929)

Gravity—	Salt Lake, Newport, Summerland, Lawndale, Los Angeles, Fullerton, Richfield, Torrance, Olinda-Brea, Alamitos Heights, Signal Hill (Nov. 8) Athens, Inglewood, Rosecrans-Dominguez. Watsonville 1	Whittier, La Habra. Coyote Hills 2	Midway-Sunset. Elk Hills, Lost Hills. Belridge. Buena Vista Hills 3	Montebello 4	Santa Fe Springs (Nov. 8) 5	Santa Maria, Coalinga 6	Wheeler Ridge. Fruitvale 7	Orcutt, Ventura, Rincon 8	Ventura Ave., (Nov. 8) 9	Elwood Terrace 10	Seal Beach (Nov. 4) 11
14 to 14.9 ...	.70	.70	.50	.70	....	.50	.50	.65	.70	....	.70
15 to 15.9 ...	.70	.70	.50	.70	....	.50	.50	.65	.70	....	.70
16 to 16.9 ...	.70	.70	.50	.70	....	.50	.50	.65	.70	....	.70
17 to 17.9 ...	.70	.70	.50	.70	....	.50	.50	.65	.70	....	.70
18 to 18.9 ...	.75	.75	.56	.70	....	.56	.56	.70	.75	....	.75
19 to 19.9 ...	.80	.80	.62	.75	....	.62	.62	.70	.80	....	.80
20 to 20.9 ...	.85	.84	.68	.80	....	.68	.68	.70	.85	....	.85
21 to 21.9 ...	.89	.88	.74	.85	.89	.74	.74	.86	.86	....	.89
22 to 22.9 ...	.93	.91	.80	.90	.92	.80	.80	.87	.87	....	.93
23 to 23.9 ...	.97	.94	.85	.95	.95	.85	.85	.90	.90	....	.97
24 to 24.9 ...	1.01	.97	.90	.98	.98	.88	.88	.94	.94	....	1.01
25 to 25.9 ...	1.05	1.00	.95	1.01	1.01	.91	.91	.98	.98	....	1.05
26 to 26.9 ...	1.09	1.04	1.00	1.04	1.04	.94	.94	1.02	1.02	....	1.09
27 to 27.9 ...	1.13	1.08	1.05	1.07	1.07	.98	.97	....	1.06	....	1.13
28 to 28.9 ...	1.17	1.12	1.10	1.10	1.10	1.02	....	....	1.10	....	1.17
29 to 29.9 ...	1.21	1.16	1.16	1.13	1.15	1.06	....	....	1.14	....	1.21
30 to 30.9 ...	1.25	1.20	1.22	1.16	1.20	1.10	....	....	1.18	....	1.25
31 to 31.9 ...	1.30	....	1.28	....	1.25	1.14	....	....	1.23	....	1.30
32 to 32.9 ...	1.35	....	1.34	....	1.30	1.18	....	....	1.28	....	1.35
33 to 33.9 ...	1.41	....	1.40	....	1.35	1.22	....	....	1.34	....	....
34 to 34.9 ...	1.47	....	1.46	....	1.40	1.26	....	....	1.40	1.16	....
35 to 35.9 ...	1.53	....	....	....	1.45	1.30	....	....	1.46	1.22	....
36 to 36.9 ...	1.59	....	....	....	1.50	....	....	....	1.52	1.28	....
37 to 37.9 ...	1.65	....	....	....	1.55	....	....	....	1.58	1.34	....
38 to 38.9 ...	1.71	....	....	....	1.60	....	....	....	1.64	1.40	....
39 to 39.9 ...	1.77	....	....	....	1.65	....	....	....	1.70	1.46	....
40 to 40.9 ...	1.83	....	....	....	....	....	....	....	1.76	1.52	....
41 to 41.9 ...	1.89	....	....	....	....	....	....	....	1.82	1.58	....
42 to 42.9 ...	1.95	....	....	....	....	....	....	....	1.88	1.64	....

*October 22. †Sunset Pacific Oil Co., October 26.

Kern River, Newhall-McKittrick, Mount Poso and Round Mountain 11 to 13.9 gravity 45 cents, 14 gravity and above 50 cents, effective October 2, 1929. On December 1, 1928, the Union Oil Co. posted Midway-Sunset, Elk Hills, Buena Vista, Lost Hills and Coalinga crude as follows: 11 to 13.9 gravity at 45 cents, 14 gravity and above 50 cents.

Column 1—Signal Hill, Seal Beach, Huntington Beach and Alamitos Heights crude, 14 to 32.9 gravity, inclusive; Richfield, Olinda-Brea and Fullerton, 14 to 30.9 gravity; Torrance and Inglewood, 14 to 28.9 gravity; Dominguez and Athens-Rosecrans, 24 to 42.9 gravity.

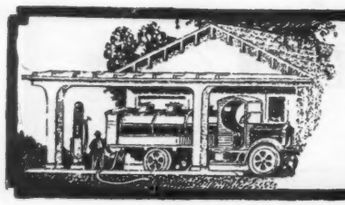
Column 2—Whittier crude, 14 to 22.9 gravity; Coyote Hills, 14 to 30.9 gravity.

Column 3—Kern River, Newhall and McKittrick, 11 to 19.9 gravity; Midway-Sunset, Buena Vista and Elk Hills, 11 to 33.9 gravity; Lost Hills, 11 to 34.9 gravity; oil below 14 gravity posted at 45 cents.

Column 6—Oil below 14 gravity posted at 45 cents.

Columns 8 and 9—Posted by Union Oil Co. only.

Kettleman Hills, 55 gravity and above, $1.55 (posted by Standard Oil Co. of California).



TANK WAGON MARKETS

Tank wagon quotations for gasoline and kerosene in United States as furnished by the larger marketing concerns Feb. 4

ALL TANK WAGON AND SERVICE STATION QUOTATIONS INCLUDE TAXES

STANDARD OIL CO. (INDIANA)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Chicago†	17.0	18.0	3.0	13.0
Decatur, Ill.	19.2	20.2	3.0	13.1
E. St. Louis	18.4	19.4	3.0	12.2
Joliet	19.4	20.4	3.0	13.3
Peoria	19.2	20.2	3.0	13.1
Quincy	19.2	20.2	3.0	12.9
Davenport, Ia.	19.5	20.5	3.0	13.3
Des Moines	19.5	20.5	3.0	13.3
Keokuk	19.5	20.5	3.0	13.3
Sioux City	19.1	20.1	3.0	12.9
Duluth, Minn.	20.5	21.5	3.0	13.9
Mankato	20.1	21.1	3.0	13.7
Minneapolis	20.2	21.2	3.0	13.9
LaCrosse, Wis.	19.2	20.2	2.0	14.0
Milwaukee	18.1	19.1	2.0	12.9
Madison	18.3	19.3	2.0	13.1
Detroit, Mich.	19.8	20.8	3.0	14.7
Grand Rapids	19.7	20.7	3.0	14.6
Saginaw	19.9	20.9	3.0	14.8
Evansville, Ind.	20.0	21.0	4.0	14.0
Fort Wayne	20.4	21.4	4.0	14.4
Indianapolis	20.2	21.2	4.0	14.2
South Bend	20.4	21.4	4.0	14.4
Fargo, N. D.	21.9	22.9	3.0	15.9
Huron, S. D.	21.8	22.8	4.0	14.7
Sioux Falls	20.1	21.1	4.0	14.4
K. C., Mo.*	18.9	19.9	3.0	11.6
Springfield*	18.8	19.8	3.0	12.5
St. Louis*	17.9	18.9	2.5	12.3
St. Joseph	18.5	19.5	2.0	12.2
Wichita, Kans.	17.8	18.8	3.0	11.8
Bartlesville, Ok.	18.5	19.5	4.0	11.5

*State tax 2 cents; remainder city tax.
†Effective February 20, discounts on Q.D.A. in Chicago district 2 cents off service station price on purchases of 500 gallons or more per month and 4 cents on purchases of 1,000 gallons or more per month.

NAPHTHA

	Tank wagon	Tank car
Oleum spirits	14.7	12.8
V. M. & P. Naphtha	16.7	13.9
Cleaner's naphtha	17.0	14.9
Stanisol	17.0	15.4

Tank wagon prices f.o.b. Chicago; tank car prices f.o.b. Whiting.

STANOLIND FURNACE OIL IN CHICAGO

Less than 100 gallons	9.0
100 to 349 gallons	8.0
350 gallons or more	7.5

Note—Outside Chicago furnace oil discount of 1 cent per gallon is given on deliveries of 100 to 349 gallons and 1½ cents on deliveries of 350 gallons or more.

The following quantity discounts from the service station price are allowed on monthly sales of gasoline; 2,000 gallons or less, 2 cents; more than 2,000 and less than 6,000 gallons, 2½ cents; more than 6,000 gallons, 3 cents. Discounts are allowed each month and they are not cumulative. Delivery tickets showing date and quantity delivered must be sent to the seller before the tenth of the month to secure the discount on the previous month's purchases.

SOUTHWESTERN DISTRICT

Magnolia Petroleum Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	17.0	21.0	4.0	12.0
Fort Worth	17.0	20.0	4.0	12.0
Houston	16.0	19.0	4.0	11.0
San Antonio	15.0	19.0	4.0	11.0
El Paso	16.0	20.0	4.0	14.0
Texarkana	17.0	19.0	4.0	12.0
Muskogee*	13.0	15.0	4.0	10.0
Okla. City*	15.0	18.0	4.0	10.0
Tulsa*	15.0	19.0	4.0	10.0
Ft. Smith, Ark.	15.0	17.0	5.0	12.0
Little Rock	18.0	20.0	5.0	13.0

*Gasoline tank wagon price to dealers 2 cents under posted tank wagon.

ROCKY MOUNTAIN DISTRICT

Continental Oil Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Denver, Colo.	18.0	21.0	4.0	15.5
Pueblo	18.0	21.0	4.0	15.5
Grand Junction	22.5	25.5	4.0	19.0
Casper, Wyo.	19.0	22.0	4.0	14.0
Cheyenne	20.5	23.5	4.0	15.5
Butte, Mont.	25.5	28.5	5.0	20.0
Helena	25.5	28.5	5.0	20.0
Salt Lake, Utah	21.0	24.0	3.5	17.0
Albu'que, N. M.	20.0	22.0	5.0	17.0
Boise, Idaho	23.5	26.5	4.0	19.0
Twin Falls	23.5	22.0	4.0	19.0

PENNSYLVANIA—DELAWARE AND PART NEW ENGLAND

The Atlantic Refining Co.

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Pittsburgh, Pa.	15.0	*21.0	...	13.0
Philadelphia	15.0	*21.0	...	13.0
Scranton	15.0	*21.0	...	13.0
Allentown	15.0	*21.0	...	13.0
Altoona	15.0	*21.0	...	13.0
Erie	15.0	*19.0	3.0	13.0
Dover, Del.	18.0	20.0	3.0	13.0
Wilmington	18.0	20.0	3.0	13.0
Springf'd, Mass.	16.0	18.0	2.0	15.0
Worcester	18.0	20.0	2.0	15.0
Boston	18.0	20.0	2.0	15.0
Providence, R.I.	18.0	20.0	2.0	13.0
Hartford, Conn.	18.0	20.0	2.0	15.0
New Haven	18.0	20.0	2.0	15.0

*Includes tax of 4.0 cents. Pennsylvania tax is collected by the dealer and paid by him direct to the State. The Atlantic Refining Co. recognizes a 2-cent per gallon discount on gasoline from its posted tank wagon markets on sales to dealers for purposes of resale. The Atlantic Refining Co. also recognizes a maximum discount of 2 cents per gallon on gasoline to commercial accounts under contract for one year.

NEW YORK AND PART OF NEW ENGLAND DISTRICT

Standard Oil Co. (New York)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	17.6	19.6	2.0	14.6
New York*	16.3	17.3	2.0	13.3
Buffalo	16.8	17.8	2.0	13.8
Rochester	17.0	18.0	2.0	13.0
Syracuse	17.8	18.8	2.0	13.8
Boston, Mass.	16.5	17.5	2.0	12.5
Augusta, Me.	19.8	20.8	4.0	13.8
Manch't'r, N. H.	19.4	20.4	4.0	13.4
Burlington, Vt.	20.3	21.3	4.0	14.3

*Prices in steel barrels.

SOUTHERN DISTRICT

Standard Oil Co. (Kentucky)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	18.0	20.0	4.0	16.5
Augusta	20.0	22.0	4.0	15.5
Macon	21.0	23.0	4.0	16.5
Savannah	22.0	24.0	4.0	15.5
Birm'ham, Ala.	17.0	19.0	4.0	13.0
Mobile	18.0	20.0	4.0	15.0
Montgomery	19.0	21.0	4.0	16.5
Clarks'le, Miss.	18.0	20.0	5.0	12.5
Jackson	19.0	21.0	5.0	13.0
Natchez	20.5	20.5	5.0	14.0
Gulfport	22.5	24.5	5.0	14.0
Vicksburg	20.5	22.5	5.0	14.0
Jack'ville, Fla.	22.0	24.0	6.0	14.5
Miami	23.0	25.0	6.0	15.5
Pensacola	18.0	20.0	6.0	14.5
Tampa	20.0	22.0	5.0	14.5
Lexington, Ky.	20.0	22.0	5.0	15.5
Covington	19.0	20.0	5.0	15.5
Louisville	21.0	23.0	5.0	13.0
Ashland	20.0	21.0	5.0	15.5
Catlettsburg	20.0	21.0	5.0	15.5

In addition to the state tax of 4 cents on gasoline, Montgomery has city tax of 1 cent on gasoline and one-half cent on kerosene. Kerosene prices in Georgia include 1-cent tax. In Florida, an inspection fee of 0.125 cent; in Alabama, an inspection fee of one-half cent on kerosene and one-fourth cent on gasoline. Pensacola and Mobile taxes include 1-cent city levy. Gulfport tax includes privilege tax of 2 cents in addition to state tax.

Effective April 2, price to dealers 2 cents under posted tank wagon price.

PACIFIC COAST TERRITORY

Standard Oil Co. (California)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
San Francisco	20.0	23.0	3.0	15.5
Los Angeles	19.5	22.5	3.0	15.5
Reno, Nev.	25.0	28.0	4.0	19.0
Portland, Ore.	26.5	24.5	3.0	16.5
Seattle, Wash.	20.5	23.5	3.0	16.5
Tacoma	20.5	23.5	3.0	16.5
Spokane	24.5	27.5	3.0	20.5
Phoenix, Ariz.	18.0	22.0	4.0	20.0

NEBRASKA

Standard Oil Co. (Nebraska)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Omaha	20.25	22.25	4.0	13.25
McCook	21.75	23.75	4.0	14.75
Norfolk	20.75	22.75	4.0	13.75
N. Platte	21.75	23.75	4.0	14.50
Scottsbluff	21 75	23 75	4.0	14.25

ATLANTIC COAST DISTRICT

Standard Oil Co. (New Jersey)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Atlantic City	16.5	18.5	2.0	13.5
Newark, N. J.	15.5	17.5	2.0	12.5
Annapolis, Md.	18.0	20.0	4.0	13.0
Baltimore	17.2	19.2	4.0	10.5
Cumberland	19.0	21.0	4.0	14.0
Washington	15.7	17.7	2.0	12.7
Danville, Va.	19.8	21.8	5.0	13.8
Norfolk	18.3	20.3	5.0	11.0
Petersburg	19.3	21.3	5.0	13.3
Roanoke	20.0	22.0	5.0	14.0
Richmond	18.7	20.7	5.0	12.7
Charles'n W.Va.	18.5	20.5	4.0	13.5
Keyser	19.1	21.1	4.0	14.1
Parkersburg	17.2	19.2	4.0	12.2
Wheeling	18.4	20.4	4.0	13.4
Charlotte, N. C.	20.3	22.0	5.0	14.3
Hickory	20.8	22.8	5.0	14.8
Mt. Airy	20.5	22.5	5.0	14.5
Salisbury	20.7	22.7	5.0	14.7
Charleston, S.C.	19.3	21.3	6.0	12.3
Columbia	21 2	23 2	6.0	14 2

A 2-cent per gallon discount off the gasoline tank wagon price is offered to dealers.

OHIO

Standard Oil Co. (Ohio)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
Ohio points*	18.0	19.0	4.0	†12.0

*Dealers and commercial accounts 2 cents under tank wagon.
†Service station price 14 cents.

CENTRAL SOUTH DISTRICT

Standard Oil Co. (Louisiana)

	Gasoline Tank wagon	Gasoline Service station	Gasoline Incl'ds tax of	Kero. tank wagon
N. Orleans, La.*	15.0	15.0	5.0	13.0
Baton Rouge	16.0	18.0	4.0	14.0
Alexandria	17.0	19.0	5.0	14.0
Lafayette†	18.0	20.0	5.0	14.0
Lake Charles†	18.0	20.0	5.0	14.0
Shreveport	16.0	18.0	4.0	14.0
Knoxv'le, Tenn.	20.0	22.0	5.0	16.0
Memphis	18.0	20.0	5.0	12.5
Chattanooga	20.0	22.0	5.0	13.0
Nashville	19.0	21.0	5.0	16.0
Bristol	19.0	20.0	5.0	14.0
Lt. Rock, Ark.	18.0	20.0	5.0	13.0

*Tax of 5 cents includes city tax of 1 cent. Louisiana Kerosene prices include 1-cent state tax and 1-cent parish tax.
†Includes 1-cent parish tax.

TANK WAGON CHANGES

Standard Oil Co. of Louisiana, effective January 29, advanced the gasoline tank wagon and service station prices 2 cents at Knoxville, Tenn. Same company advanced gasoline retail price at Nashville, Tenn., 2 cents.

Standard Oil Co. of California, effective February 1, reduced gasoline tank wagon and service station prices 1½ cents at Phoenix, Ariz.

Standard Oil Co. of New York changed gasoline tank wagon and service station and kerosene tank wagon prices in New York and New England states in line with its new policy of establishing base prices at refineries and adding transportation charges to points of consumption. In general prices were reduced at points close to the coast and advanced at inland points.

NORTH DAKOTA DIVISION URGES LOYALTY TO CODE

Strict adherence to the National Code of Practices for marketing refined petroleum products was urged in a resolution adopted by the North Dakota division of the Northwest Petroleum Association which met in the Dacotah Hotel, Grand Forks, January 30 and 31. Another resolution enjoined "extreme caution" in further increasing the tax on petroleum products.

Speakers included E. C. Laughlin, president of the Northwest Petroleum Association, "Our Organization"; Paul E. Hadlick, retiring secretary of the North Dakota Division, "The Code, Its Interpretation and Why It Is Being Accepted"; Prof. C. C. Wagner, Madison, S. Dak.; "Relation of Chemistry to the Oil Industry"; J. B. Townsend, Westland Oil Co., "Salesmanship"; State Senator W. S. Whitman, who told of efforts to aid the oil industry in the legislature; Col. T. A. Peck, Shell Petroleum Corp., "Automobile Performance in 1930"; J. O. Lynstad, deputy state auditor, "Workings of the Gasoline Tax Law," and C. D. Bruce, Minot, N. Dak., "Credits."

The following were elected to the board of directors: K. H. Helgerud, Helgerud Oil Co., Harvey, N. Dak.; Elmer Wardrope, Quality Oil Co., Leeds, N. Dak.; H. A. Schmitt, Red Trail Oil Co., Mandan, N. D.; John Jess, Jess Oil Co., Fargo, N. Dak., and R. J. Coughlin, Westland Oil Co., Minot, N. Dak. R. J. Coughlin, Westland Oil Co., was chosen chairman of the division to succeed Henry M. Wilson, and Elwin E. Hadlick was elected secretary to succeed his brother, Paul E. Hadlick.

SAILS FOR RUSSIA

Col. George A. Burrell sailed for Russia on February 1 to remodel and design new gasoline and vapor recovery plants of the Grozneft Oil Co. of Russia. He will be gone several months on his first trip.

CRUDE OIL PRICES

(Continued from Page 135)

Salt Flat (Jan. 15, 1930)§	1.05
Rockdale Minerva (April 15):	
Below 28 gravity	1.25
28-38.9 gravity	1.27
39-39.9 gravity	1.29
40 and above	1.31
Thrall‡	
Callihan (May 15)	1.75
Lytton Springs (Lockhart)	See gravity table
Somerset	See gravity table

*Posted by Magnolia Petroleum Co.
†Magnolia Petroleum Co., Humble Oil & Refining Co., Crown Central Pipe Line Co.
‡Thrall prices same as North Central Texas less 19½ cents per cwt. freight.
§Humble Oil & Refining Co.

EASTERN STATES

Joseph Seep Purchasing Agency
(Effective October 1, 1929)

Penna Grade Oil in New York Transit Lines (New York)	$3.05
Bradford District Oil in National Transit Lines (Pennsylvania)	3.05
Penna Grade Oil in National Transit Lines (Pennsylvania)	3.05
Penna Crude Oil in Southwest Pennsylvania Lines (West Virginia)	3.00
Penna Grade Oil in Eureka Pipe Line Lines (Pennsylvania)	2.90
Penna Grade Oil in Buckeye Pipe Line Lines (Ohio)	2.70
Cabell Grade Oil in Eureka Pipe Line Lines (West Virginia) (May 22, 1929)	1.75
Corning 35-cent Grade Oil in Buckeye Pipe Line Co.'s Line (May 22, 1929)	1.70
Corning 25-cent Grade Oil in Buckeye Pipe Line Co.'s lines (May 22, 1929)	1.80
Somerset Oil in Cumberland Pipe Line Lines (Kentucky) (Nov. 12, 1929)	1.55
Ragland Grade Oil in Cumberland Pipe Line Lines (Kentucky) (Jan. 29)	.60
Wayne district oil in Cumberland Pipe Lines	1.42

MIDDLE WESTERN STATES

Ohio Oil Co.
(Effective May 21, 1929)

Lima	$1.80
Wooster	1.90
Illinois	1.75
Indiana	1.57
Princeton	1.75
Plymouth	1.28
Waterloo (November 17, 1926)	1.35
Western Kentucky	1.68
Dundee, Mich. (Sept. 17, 1929)‖	
	Same as Mid-Continent gravity scale
Upper and Lower Traverse sands, Mich.‡	
	Same as Mid-Continent gravity scale
Midland, Mich. (December 6, 1929)*	$1.50
Saginaw, Mich., Saginaw sand (February 10)†	1.89
Saginaw, Mich., Berea sand (February 10)†	1.79
Cumberland, Clay, Barren, Clinton and Monroe Counties, Kentucky (March 15)†	1.50
Oil in line in Stoll Oil Refinery Co. in Oil City, Ky. (Jan. 20, 1930)§	1.55
Oil Springs (Canada)¶	2.27
Petrolia (Canada)¶	2.20

*Posted by Pure Oil Co.
†Posted by Sun Oil Co.
‡Posted by Paragon Development Co.
§Posted by Stoll Oil Refining Co.
¶Posted by Imperial Oil Co., Ltd.
‖Posted by Standard of Indiana for boat shipment.

MEXICAN CRUDE

Panuco*	$ .85

*Based on November transactions for deliveries during December and January. Price exclusive of taxes.

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Transcontinental Oil to Halve Stock

Dividend of 30 Cents Declared, Subject to One for Two Share Exchange. Movement of Oil Issues

Transcontinental Oil Co. has proposed to stockholders reduction in present outstanding stock, amounting to slightly over 6,500,000 shares of no par value, by one-half. One share of the new capital stock would be exchanged for each two shares of present common stock outstanding.

Subject to approval of the proposed capital change, to be acted upon by stockholders at special meeting March 4, when the annual meeting will also be held, directors have declared an initial dividend of 30 cents on the new stock, payable May 1 to stock of record April 15.

Authorized capital stock is at present 7,000,000 shares of no par value, which will be reduced by reclassification to 3,500,000. To place the board in position to provide for the future expansion of the business it is proposed to increase the authorized maximum of new stock to 8,000,000 shares.

Report of Transcontinental Oil Co. for year ended December 31, 1929, shows net profit of $4,723,990 after inventory adjustment, interest, depreciation, dry holes, property abandoned and Federal taxes. In preceding year company reported profit, including $359,399 profit from Yates "A" lease, after inventory adjustment, interest, depreciation, dry holes and property abandoned, but before Federal taxes, of $1,506,802. No mention is made of depletion in either year. Stock outstanding consists of 6,544,219 no-par shares.

"Notwithstanding the recent crude oil price reductions," F. B. Parriott, president of Transcontinental Oil Co., stated in his remarks to stockholders, "earnings for 1930 should show an improvement over 1929 since the company's daily gross production at this time is 12,000 bbls. more than at the beginning of 1929. Present gross production from 425 wells is 35,000 bbls. daily."

Daily average gross crude oil production for 1929 was 29,265 bbls., compared with 15,943 bbls. in 1928, with 10,382 bbls. in 1927 and 5,391 bbls. in 1925.

Further development of company's properties in Yates Pool, Pecos County, Texas, (owned jointly with Mid-Kansas Oil & Gas Co.) has, the report states, resulted in an increase of their potential daily production, based on official measurements, from 2,342,945 bbls. on February 1, 1929, to 2,913,302 bbls. on December 31, 1929. On that date, potential production of the entire field was 5,316,494 bbls. a day.

During the year, Transcontinental established 25 additional bulk stations and 61 additional service stations. It is marketing 41 per cent of its gasoline, kerosene and motor oil production through its own outlets, and it is the company's intention to further increase those outlets by gradual expansion. The company's three refineries operated at a profit despite curtailment throughout most of the year.

Transcontinental Oil Co. new common stock, when, as and if issued, has been admitted to dealings on the New York Produce Exchange.

Standard Oil of New York

L. L. Marcell and John A. Brown have been elected directors of Standard Oil Co. of New York, succeeding Lionel T. Barneson and Theodore Pratt, both of whom resigned. Mr. Marcell was chairman of the board of White Eagle Oil & Refining Co., which was recently taken over by the New York company. Mr. Brown was also elected a vice president.

Galena-Signal Oil of Texas

Galena-Signal Oil Co. of Texas has filed amendment to its charter reducing capital stock to $5,000 from $12,000,000. The company some time ago disposed of most of its holdings to Texas Corp.

National Refining

National Refining Co. reports for year ended December 31, 1929, net profit of $1,845,485 after all charges and Federal taxes, equivalent after preferred dividends to $3.12 a share (par $25) on 463,262 shares of common stock, comparing with $1,700,614 or $2.80 a share in 1928. At annual meeting directors were re-elected.

Pure Oil

Pure Oil Co. declared the regular quarterly dividend of 37½ cents on the common, payable March 1 to stock of record February 10.

South West Penn. Pipe Line

Report of South West Pennsylvania Pipe Lines for year ended December 31, 1929, shows profit of $176,697 after depreciation, etc., equivalent to $5.04 a share (par $50) earned on 35,000 shares of stock. This compares with $340,317 or $9.72 a share in 1928. All dividends paid during the year were from current earnings.

Cumberland Pipe Line

Cumberland Pipe Line Co. reports for year ended December 31, 1929, net profit of $6,555, equivalent to 22 cents a share (par $50) earned on 30,000 shares of stock. This compares with $102,133, or $3.40 a share, in 1928.

Prairie Pipe Line

Prairie Pipe Line Co. and Pure Oil Pipe Line Co. for year ended December 31, 1929, report net income of $22,800,-453 after charges and federal taxes, equivalent to $5.63 a share (par $25) on 4,-

TRANSACTIONS IN OIL SHARES ON NEW YORK STOCK EXCHANGE

Quotations Compiled by Francis, Bro. & Co., Members of New York Stock Exchange, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended January 29 Sales	Week ended January 29 High	Week ended January 29 Low	Week ended January 29 Close	Stocks—		Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
21⅞	18	800	19	19	19	Amerada Corp.	(sh)	922,075	N.P.	50cQ	1-31-30	37⅝	27⅝	43⅞	27⅛	42⅝	17½
25⅛	20½	1,500	22½	21⅞	21⅞	American Republics Corp.	(sh)	209,180	N.P.	.....	3-20-29	82⅛	35⅛	85	51⅛	64¾	12½
37⅜	33½	400	35⅛	35	35	Associated Oil		$57,260,300	$25	50cQ	12-31-29	50¼	35	53⅜	37½	47¼	34½
39⅜	36¼	3,300	38⅛	37¾	38	Atlantic Refining		$50,000,000	$25	25cQ	12-16-29	131⅜	104	66⅜	50	77⅞	30
24¼	21⅝	4,800	22½	22⅛	22⅜	Barnsdall Corp.		$45,235,650	$25	50cQ	12- 7-29	35½	20¾	53	20	49⅛	20
23⅞	21⅛	2,800	22¾	22	22⅝	Continental Oil of Delaware	(sh)	4,741,554	N.P.	.....	3-31-27	..	..	..	..	47⅛	18
52¾	49¼	1,000	51¾	50⅝	51¾	General Asphalt		$20,785,400	N.P.	50cQ	.....	96¾	65	94⅞	68	94¾	42¼
59½	52¼	700	57	56½	56¾	Houston Oil		$25,000,000	$100	.....	.....	175¾	60⅛	167	79	109	26
23½	21¼	1,000	22½	22⅛	22⅛	Independent Oil & Gas	(sh)	1,333,572	N.P.	50cQ	1-31-30	32¾	17⅝	38⅜	21¾	39⅜	17¾
20¾	17¾	5,200	20	19¼	19¼	Indian Refining		$12,307,370	$10	.....	5-31-24	12⅛	7⅝	39⅝	9	53	13⅛
22⅛	21¼	200	22⅛	22	22⅛	Lago Oil & Transport	(sh)	3,992,122	N.P.	.....	5- 1-27	37¾	20½	39⅛	27⅜	38⅜	16½
9½	8½	100	8⅞	8⅞	8⅞	Louisiana Oil Refining	(sh)	1,190,063	N.P.	.....	.....	18⅛	10	19¾	9⅜	18	7
		No sales.				Maracaibo Oil	(sh)	330,000	N.P.	.....	.....	22¾	12	25½	12½	18½	5⅛
21¾	16⅛	10,400	20⅝	19	19¼	Mexican Seaboard	(sh)	1,276,873	N.P.	.....	12-15-20	9¼	3	73	4⅝	69⅜	9¼
28	25	500	26⅜	26	26	Mid-Continent Petroleum	(sh)	1,857,912	N.P.	50cQ	12-15-29	39⅜	25½	44½	25⅛	39⅞	22⅛
		No sales.				Middle States Oil		$24,298,850	$10	.....	7- 1-23	3¾	1⅝	7⅜	2⅜	5⅛	¾
		No sales.				Pan American P. & T.		$50,084,700	$50	.....	10-20-27	65⅞	40⅛	54⅞	38¼	69	40½
60¼	50¼	300	52	52	52	Pan American P. & T. "B"		$121,105,050	$50	.....	11-15-24	66⅜	40¼	58⅞	37¾	69¼	40½
		No sales.				Pan American Western "B"	(sh)	400,000	N.P.	.....	1-30-27	37⅞	16¾	28⅜	15½	18½	13⅝
		No sales.				Panhandle P. & R.	(sh)	199,370	N.P.	.....	.....	18⅞	8	21¾	11½	15¼	3
		No sales.				Panhandle P. & R. pfd.		$2,564,400	$100	.....	7- 2-23	83	54	108	70	76	47½
35	31⅛	1,800	33¼	32⅝	33¼	Phillips Petroleum	(sh)	2,406,796	N.P.	50cQ	1- 2-30	60¼	36¼	53⅞	35¼	47	24¼
1¼	1	300	1⅛	1⅛	1⅛	Pierce Oil Corp.		$29,622,831	$25	.....	.....	1⅛	½	5¼	½	3⅜	1
3	2¼	1,300	2¾	2⅝	2⅝	Pierce Petroleum	(sh)	2,500,000	N.P.	.....	.....	5½	2½	7	3½	5⅞	½
52	48½	1,000	50¾	50¾	50¾	Prairie Oil & Gas		$61,720,125	$25	50cQ*	12-31-29	55½	45⅝	68	46	65⅝	40½
59⅝	58	800	59½	59¼	59½	Prairie Pipe Line		$101,250,000	$25	75cQ†	12-31-29	190	130¾	280	172	65	45
9½	8⅛	200	8½	8½	8½	Producers & Refiners		$37,438,950	$50	.....	9-15-23	33⅞	16¾	29⅞	16	25⅞	4
		No sales.				Producers & Refiners pfd.		$2,845,350	$50	.....	5- 1-25	50	36⅞	49⅝	41	46¾	25½
24⅜	22½	1,300	23¼	23⅛	23¼	Pure Oil		$75,959,250	$25	37½cQ	12- 2-29	33½	25	31⅝	19	30¾	20
26½	22⅞	1,200	25¾	25¼	25¼	Richfield Oil		$47,964,650	$25	50cQ	11-15-29	28⅝	25⅜	56	23	49⅝	20
19½	18¼	300	19	19	19	Rio Grande Oil	(sh)	1,200,000	N.P.	$2.00A	7-25-29	..	..	37½	32	42½	15
54⅝	52⅜	2,300	52¾	52⅜	52⅝	Royal Dutch, N. Y.	(sh)	611,303	$1.873	.....	9-13-29	54½	44¼	64	44⅝	64	43⅛
23⅝	21⅜	1,000	23	22¾	22¾	Shell Union Oil	(sh)	13,000,000	N.P.	35cQ	12-31-29	31¾	24⅝	39¼	23¼	31¾	19
26½	22⅞	6,500	27¼	23⅝	27	Simms Petroleum		$8,060,380	$10	40cQ	12-14-29	25⅜	14¼	27¼	18⅛	40⅛	15
25¾	23½	5,700	25	24⅝	24¾	Sinclair Consolidated	(sh)	5,500,000	N.P.	50cQ	1-15-30	22⅜	15	46¾	17⅜	45	21
111	109⅛	300	111	110⅜	111	Sinclair Consolidated pfd.		$16,025,250	$100	$2Q	11-15-29	104½	97	110	102½	111	103
32	29⅞	700	31	30¾	30¾	Skelly Oil		$27,237,750	$25	50cQ	12-16-29	37⅜	24⅛	42⅝	25	40½	28
61⅝	59½	1,500	59⅞	59⅝	59¾	Standard Oil of California	(sh)	12,594,098	N.P.	62½cQ	12-16-19	60¾	50⅜	80	53	81⅞	51½
66⅞	62	8,800	63½	63	63⅜	Standard Oil of New Jersey		$620,079,800	$25	25cQ*	12-16-29	41⅜	35⅛	59⅜	37¾	83	48
33⅞	32	3,700	32⅞	32½	32⅝	Standard Oil of New York		$434,094,575	$25	40cQ	12-16-29	34⅛	29¾	44¼	28¾	48⅛	31¾
59⅜	57⅛	200	58	58	58	Sun Oil	(sh)	1,297,627	N.P.	25cQ	12-16-29	34⅞	30	77	31½	86⅜	55
7⅜	6	4,400	6⅛	6	6	Superior Oil Corp.	(sh)	2,324,938	N.P.	.....	12-20-20	..	..	..	..	24	5¼
56¼	53¼	3,200	54	53½	54	The Texas Corporation		$211,076,650	$25	75cQ	1- 1-30	58	45	74¾	50	71⅞	50
10¾	9¼	900	9¾	9⅝	9⅝	Texas Pacific Coal & Oil Co.		$8,380,340	$10	2½%A‡	12-31-29	18⅞	12	26⅝	12⅛	23⅞	9½
		No sales.				Tide Water Oil	(sh)	2,191,759	N.P.	20cQ	12-31-29	29⅛	19	41½	19⅝	40	14
		No sales.				Tide Water 5½% pfd.		$20,705,200	$100	$1.25Q	11-15-29	90⅛	85	100⅛	86	97½	85⅛
13¼	11⅞	1,800	12⅛	11⅞	11⅞	Tide Water Associated	(sh)	4,796,158	N.P.	30cS	2-15-30	19⅛	15¾	25	14¾	23½	10
84	81⅛	300	82	82	82	Tide Water Associated pfd.		$72,844,300	...	$1.50Q	2- 2-30	..	..	..	..	90⅞	74⅛
10⅛	8⅜	16,400	9½	9	9	Transcontinental Oil	(sh)	3,742,029	N.P.	.....	.....	10⅜	3¾	14¾	7¼	15¼	5⅛
46¼	43⅝	800	44⅝	44	44	Union Oil of California		$94,798,100	$25	50cQ	11- 9-29	56½	39⅝	58	42⅜	57	42⅛
		No sales.				Union Tank Car		$31,061,200	$100	$1.25Q	12- 2-29	127½	94	128⅛	110	163¾	121⅞
20⅞	16⅝	2,100	18½	18	18	Warner-Quinlan	(sh)	356,000	N.P.	50cQ	1- 2-30	34½	24½	44⅞	26	42⅞	15
27⅝	26	500	27⅝	27⅜	27½	White Eagle Oil & Refining	(sh)	490,000	N.P.	50cQ	1-20-30	27½	20	38	20⅛	38	25
		No sales.				Wilcox Oil & Gas	(sh)	2,400,000	N.P.	.....	5-10-28	..	..	..	..	29¾	12⅞

*Plus extra dividend of 25 cents. †Plus extra dividend of 50 cents. ‡Payable in stock. x-Ex-dividend.

050,000 shares of stock. This compares with $19,786,612 or $4.88 a share in 1928.

Sun Oil

Sun Oil Co. declared the regular quarterly dividends of 25 cents on the common, payable March 15 to stock of record February 26, and $1.50 on the preferred, payable March 1 to stock of record March 10.

Southern Pipe Line

Southern Pipe Line Co. declared a special dividend of $1, payable March 1 to stock of record February 15. A year ago a special dividend for the same amount was declared.

Southern Pipe Line Co. reports for year ended December 31, 1929, net profit of $123,990 after charges, equal to $1.24 a share (par $10) on 100,000 shares of stock. This compares with net loss of $1,442 in 1928.

As result of sale of an unneeded portion of its pipe line system, approved by over 69 per cent of stockholders, with no votes against the proposition, Southern Pipe Line Co. has remaining one system of pipes from the connection with the lines of Eureka Pipe Line Co. to Millway, Pa. This system has capacity to transport 17,900 bbls. a day. During 1929 oil was transported to Millway at rate of over 6,000 bbls. a day, so that the system of pipe line retained has capacity more than double the anticipated amount that will be shipped.

"The company also receives certain revenues rendered to connecting carriers," Forrest W. Towl, president, states. "At present there is no indication of any considerable change in conditions."

Adjustments of $141,570 in profit and loss account were on account of previous years' operations and incident to sale of portions of the company's line at above depreciated value.

Since first reduction in capital stock, May 5, 1926, directors have authorized return of $7,600,000 to stockholders, but on December 31, 1929, there was $48,970 which had not been returned because about 100 stockholders had failed to return their old certificates for new $10 par certificates.

Obligations under the annuity plan cannot be definitely determined and thus are not shown in the financial statement. It is estimated they would amount to nearly $500,000 if the company stopped business, but operations may continue for many years, the company states.

Twenty Representative Stocks

The Oil and Gas Journal's weekly average price of 20 representative petroleum stocks listed on the New York Stock Exchange and New York Curb, based on closing quotations for Saturday, was as follows:

Aug. 10	54.15	Nov. 8	48.31
Aug. 17	60.32	Nov. 15	47.61
Aug. 24	60.61	Nov. 22	47.76
Aug. 31	60.90	Nov. 29	48.60
Sept. 7	59.16	Dec. 4	50.60
Sep.. 14	60.40	Dec. 11	50.51
Sept. 21	57.93	Dec. 18	49.24
Sept. 28	58.63	Dec. 24	47.36
Oct. 5	57.00	Dec. 31	48.86
Oct. 12	59.75	Jan. 8	48.56
Oct. 19	58.70	Jan. 15	48.38
Oct. 26	54.59	Jan. 22	47.13
Oct. 31	42.29	Jan. 29	47.46

INDEPENDENT OILS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Members of New York Curb Market, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended January 29 Sales	High	Low	Close	Stocks—	Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
1/16	1/8	1,000	1/8	1/8	1/8	Amer. Con. Oilfields	$11,018,000	$5	.....	.....	2 7/8	.55	1½	.53	72c	1/8
1¾	1½	700	1¾	1⅝	1¾	Amer. Maracaibo (sh)	700,000	N.P.	.....	.....	7½	2¾	9½	3⅛	.85⅝	1⅛
		No sales.				Argo Oil (sh)	683,971	$10	.....	.....	2¾	1	4½	2¼	5	1½
		No sales.				British-American (sh)	1,311,321	N.P.	25cQ*	1- 2-30	40	20½	55	32¾	62	7⅞
1	¾	400	⅞	⅞	⅞	Carib. Syndicate	$131,250	25c	.....	.....	28¼	15½	4½	3⅞	4⅞	1
30	26½	11,700	28⅛	27⅞	28⅛	Cities Service (sh)	24,290,359	N.P.	30cA†	1- 2-30	58¾	40¼	90⅞	54	68⅛	20
		No sales.				Cities Service pfd. (sh)	1,500,000	N.P.	50cM	1- 2-30	95⅜	87	103½	94½	98¾	84
⅜	5/16	300	¼	¼	¼	Colombia Syndicate	$2,000,000	$1	.....	.....	3⅞	1⅛	3¼	.76	2	½
5⅞	4¼	300	4¼	4¼	4¼	Cons. Royalty	$5,000,000	$10	15cQ	10-25-29	9¾	6⅜	8⅞	6¼	11⅛	2½
6⅝	6⅛	400	6¼	6¼	6¼	Creole Petroleum (sh)	5,977,873	N.P.	.....	.....	14⅞	9½	17½	9½	11¾	5⅝
		No sales.				Crown Central (sh)	578,000	N.P.	.....	.....	3	.50	3¼	.76	2½	¼
		No sales.				Darby Petroleum (sh)	1,019,392	N.P.	25cQ	1-15-30	12	4	33½	3¼	26	6½
		No sales.				Derby Oil & Refining (sh)	500,000	N.P.	.....	.....	2½	74	2¼	1	11	2
		No sales.				Derby Oil & Refining pfd. (sh)	48,500	N.P.	.....	.....	16¾	4	21⅜	7½	44	20¾
141	133	2,300	136⅛	134	134	Gulf Oil Corp. (sh)	4,504,921	$25	37½cQ	1- 1-30	118	86¼	165	101⅛	209	115
1½	⅞	1,400	1⅛	1	1⅛	Intercontinental Pet.	$5,682,000	$5	.....	.....	2½	.80	3⅜	1	2⅞	⅜
2⅜	1⅞	200	2⅜	2⅜	2⅜	Kirby Petroleum (sh)	750,000	N.P.	.....	.....	2¼	1⅛	3	1¼	3⅝	1¼
1⅜	1⅛	100	1⅛	1⅛	1⅛	Leonard Oil & Dev.	$50,000,000	$25	.....	.....	10⅞	5⅛	9⅜	5⅛	6⅛	1
20	18⅝	400	19¾	19¾	19¾	Lion Oil & Refining (sh)	250,000	N.P.	50cQ	1-31-30	27½	20	43⅞	20	38⅞	18
37⅞	34⅛	300	36⅞	36⅞	36⅞	Lone Star Gas (sh)	5,000,000	N.P.	20cQ	12-31-29	59⅜	37	69⅛	48½	67⅞	28
		No sales.				Magdalena Syndicate (sh)	850,000	$1	.....	.....	2⅞	.80	1⅞	.50	1¼	¼
		No sales.				Margay Oil (sh)	160,000	N.P.	50cQ	1-10-30	52	12	48½	32	38½	14
		No sales.				Mexico-Ohio Oil	.....	...	.....	.....	12⅛	5	8	2¾	6⅜	2½
		No sales.				Mountain & Gulf	$4,000,000	$1	2cQ	1-15-30	1½	1	1¾	.76	1½	¼
9⅜	8	500	8⅜	8⅜	8⅜	Mountain Producers	$1,682,182	$10	40cQ	1- 2-30	29¼	22¾	28⅞	19½	22⅞	7
		No sales.				New Bradford Oil	$1,095,291	$5	12½cQ	1-15-30	5⅞	4⅝	5⅝	4¼	5	2¼
4	3½	100	3½	3½	3½	New Mex. & Arizona	$1,000,000	$1	.....	.....	16	9¼	11⅞	7⅛	9⅜	2¼
		No sales.				North Central Texas (sh)	400,000	N.P.	15cQ	12- 2-29	12¾	9½	14¼	8½	18½	6⅛
1¾	1	18,900	1¾	1¼	1¾	Pandem (sh)	489,875	N.P.	.....	.....	9⅜	3¼	6	2⅛	3½	½
4	1⅞	1,200	3⅞	3¾	3⅞	Pantapec Oil (sh)	1,506,600	N.P.	.....	.....	12⅛	7	15⅝	8½	10¼	1⅞
		No sales.				Pennok Oil (sh)	150,000	N.P.	... ...	.....	13½	5⅛	7¾	4⅞	7¾	4⅜
		No sales.				Red Bank Oil (sh)	250,000	N.P.	.....	.....	24⅜	7	18	4⅞	16	9⅝
		No sales.				Reiter-Foster (sh)	388,584	N.P.	10cQ	12- 2-29	15½	3½	12⅞	4⅛	8½	1⅛
		No sales.				Ryan Consolidated (sh)	500,000	N.P.	.....	.....	7	4½	12	4⅛	11	3
		No sales.				Salt Creek Consolidated (sh)	1,286,300	$10	10cQ	1- 2-30	8	5¼	7¼	5½	5⅞	1⅞
12⅜	10¼	1,100	10½	10½	10½	Salt Creek Producers (sh)	1,496,859	$10	50cQ	2- 1-30	35½	27¼	35	23⅛	25⅞	9
		No sales.				Savoy Oil	$750,000	$5	.....	.....	7	1¼	3½	1	2½	5/16
4¼	2¼	1,300	3½	3½	3½	Venezuelan Petroleum (sh)	755,090	$5	5cQ	11-15-29	7⅜	4¼	9⅛	4⅜	6½	1¾
		No sales.				Woodley Petroleum	$500,000	$1	.....	.....	7	4⅜	8¼	4⅞	9½	2
		No sales.				"Y" Oil & Gas (new) (sh)	100,000	N.P.	.....	.....	6	1¾	8⅜	2⅛	2⅞	¼

*Including one-half per cent monthly in stock. x Ex-dividend. †Payable monthly and a monthly stock dividend of one-half per cent. ‡Cents per share.

STANDARD OIL STOCKS ON NEW YORK CURB

Quotations Compiled by Francis, Bro. & Co., Members of New York Curb Market, Kennedy Building, Tulsa, Okla.

1930 High	1930 Low	Week ended January 29 Sales	High	Low	Close	Stocks—	Outstanding capital	Par value	Div. rate	Last paid	1927 High	1927 Low	1928 High	1928 Low	1929 High	1929 Low
17⅝	17	9,500	17⅝	17¼	17⅜	Anglo-American Oil (nv)	£4,192,635	£1	.36 3/8	11-27-29	21⅝	17⅞	22⅜	14⅞	17	11
		No sales.				Borne Scrymser	$1,000,000	$25	$1S.A.	10-15-29	69	50	56½	44½	46½	25
		No sales.				Buckeye Pipe Line	$10,000,000	$50	$1Q	12-14-29	60	45	76	53	74¼	55
		No sales.				Chesebrough Mfg.	$3,000,000	$25	$1Q*	12-30-29	126	76½	161	117	210	130
		No sales.				Continental Oil	$36,057,840	$10	.....	12-15-27	22⅝	16¼	23	16	29	10
		No sales.				Cumberland Pipe Line	$1,500,000	$50	$1Q	12-15-29	137	89	114	67	75¾	40
		No sales.				Eureka Pipe Line	$5,000,000	$100	$1Q	11- 1-29	68½	47	88	64⅛	70½	42
3¾	2½	400	3½	3½	3½	Galena Signal Oil	$16,000,000	$100	.....	.....	13½	3½	13	4¼	6½	3
86⅜	78	400	82⅝	81⅝	81¾	Humble Oil & Refining	$74,103,300	$25	50cQ	1- 1-30	68½	54	114¾	59¼	128	74⅛
310	305	1,400	309¾	308	309¾	Illinois Pipe Line	$20,000,000	$100	$10S.A.	12-16-29	182	123¾	290½	176½	340½	260
27⅜	25½	400	25⅞	25¾	25⅞	Imperial Oil Co., Ltd. (sh)	26,421,768	N.P.	12½cQ	12- 2-29	64¾	37¾	104	56¾	41	22
41	38⅝	200	39½	39½	39½	Indiana Pipe Line	$3,000,000	$10	50cQ‡	2-15-30	94½	61	91⅞	74⅜	41⅞	26
21⅞	20⅜	300	20⅝	20⅜	20½	International Pet. (sh)	14,247,088	N.P.	12½cQ	12-16-29	29	28¼	55	35	30⅜	15
22⅜	21¼	200	21⅜	21⅜	21⅜	National Transit	$6,362,500	$12.50	25cQ‡	12-16-29	24	13½	32⅜	19⅜	25⅛	10½
		No sales.				New York Transit	$1,000,000	$10	40cQ§	1-15-30	44½	31¼	75	38½	17½	10
53	50¼	50	51	51	51	Northern Pipe Line	$2,000,000	$50	$2S.A.	1- 2-30	100	70	69	56½	63	41
71¼	69¾	400	70½	70¼	70¼	Ohio Oil	$60,000,000	$25	50cQ‡	12-14-29	67⅞	52	84	58½	79⅞	64⅛
		No sales.				Penn Mex. Fuel	$10,000,000	$25	50cQ	12-14-29	39	12	84	28	44½	20
		No sales.				Solar Refining	$4,000,000	$25	$1.25S.A.	12-20-29	..	..	..	..	50	29
		No sales.				Southern Pipe Line	$1,000,000	$10	50cQ	.....	27¼	15½	19	15	22½	13
41⅛	40¼	400	40¼	40¼	40¼	South Penn Oil (new)	$30,000,000	$25	50cQ	12-30-29	41½	35	71⅞	36¾	60¼	35⅛
		No sales.				Southwest Pa. Pipe Lines	$1,750,000	$50	$1Q	10- 1-29	83	55½	102	70	70	60
54⅝	52	2,500	53½	53¼	53½	Standard Oil of Indiana	$348,175,069	$25	62½cQ‡	12-16-29	81½	64⅜	95⅞	70⅞	63	45
30	28⅜	200	28⅞	28⅞	28⅞	Standard Oil of Kansas	$8,000,000	$25	50cQ	12-16-29	20⅞	14⅝	37¾	15	33¾	18
34⅞	33¼	200	34⅜	34⅜	34⅜	Standard Oil of Kentucky	$25,654,516	$10	40cQ	12-16-29	130	111½	179¾	122¼	46⅞	29
46⅞	44⅛	200	46	46	46	Standard Oil of Nebraska	$4,649,225	$25	62½cQ‡	12-20-29	49½	40	54⅞	39⅞	50¼	40
		No sales.				Standard Oil of Ohio	$14,000,000	$25	62½cQ	1- 2-30	87½	72	134	71	129	60
		No sales.				Swan-Finch Co.	$861,466	$25	.....	12- 2-29	21	14½	23½	16	18	10
96½	93⅝	300	95	95	95	Vacuum Oil Co.	$126,180,350	$25	$1Q	12-20-29	..	..	111	72	133¾	75

Note—High and low on all stocks selling this week are for 1930.
*Plus 50 cents extra. ‡Plus 25 cens extra. §Plus 10 cents extra. x Ex-dividend.

GAS PROPULSION OF PETROLEUM THEORIES

(Continued from Page 30)

is drawn into a sponge. As water has about three times the surface tension of crude oil, capillary action would have about three times as much effect on water as on oil. The constant tendency of capillarity is to draw water into the finer openings, displacing the oil and gas and so forcing them to the larger openings. This theory deals only with the removal of oil and gas from source rocks. If such removal occurred it would be a process of dissemination instead of accumulation. No cause is assigned for the entrance of invading water into the fine-grained sediments.

Experiments demonstrated that the first liquid to wet sand grains continued to adhere to them. If this be true capillarity would oppose all motion, and it would be impossible for water to drive oil out of shales, or other rocks.

Capillarity is suggested as the means of "sealing up" of oil pools; this would necessitate a resistance against flow instead of a tendency toward it.

Hydraulic Theory

The hydraulic theory sets forth the idea that oil and gas are transported and accumulated by circulating, or flowing, underground water. This is far the most important of the four popular theories since all others depend upon this circulation of underground water for their efficiency. To justify this theory there must be an enormous water supply and some place for it to go; there must be a water head sufficient to overcome frictional losses and to move oil through small openings. But in capillary openings the flow is very slow. In subcapillary openings Lindgren says the water is held firmly glued to the walls by adhesion—and most openings in shales, slates and clays are subcapillary. If the pressure were sufficient to move the small globules of oil through the sands, it seems probable that it would be sufficient to sweep away also the larger oil masses so no extensive accumulation could occur. Unconformities, thinning beds, cementation, sealed faults and subcapillary openings hinder, if not prohibit, extensive water circulation in most sediments.

If hydraulic currents large enough to move globules of oil and bubbles of gas through the sands were now flowing, the displaced salt water would have to issue as enormous salt springs. It is estimated that if water were passing through a sand 50 feet thick, 10 miles wide, and of 20 per cent porosity, with a velocity of 1 foot per day, nearly 400,000 gallons of water would be displaced daily. Such tremendous outflows do not occur.

If flowing, or circulating waters gather oil and gas from wide areas just why should they flow over the restricted highest points and there discard their load of oil?

"Roof leakage" is suggested as a reason why a great outflow of water does not take place. If such enormous roof-leakage occurs the velocity and hydraulic head of the water remaining in the channel of circulation would appear inadequate to overcome friction and transport the oil. If oil is floated to higher places by water what is to prevent the dissemination of the oil throughout the entire roof area by this same roof leakage?

Meteoric Waters

Competent authorities state that the meteoric waters do not penetrate below approximately 1,000 feet, and numerous drillings have shown extensive areas where lower strata were dry.

In the Appalachian Field fresh water is found in appreciable amounts in one or more beds, as a rule, to a maximum depth of 200 to 800 feet. Brackish or salt water occurs below the fresh water at depths ranging from 400 to 3,000 feet. In a few cases salt water was found at greater depth but in all such cases the amount and head of this water was very small, regardless of the porosity of the containing bed. In many wells open, porous sandstones from 1,000 to 3,000 feet from the surface show no water. The volume and head of water in a given bed decreases with increasing depth from the surface. Examples are numerous in the deeper sands where the supply of water in a given bed entirely disappears when traced down the dip.

The fact that salt water usually is associated with oil would invalidate the contention that meteoric waters have affected the accumulation.

If oil field pressures were due to hydrostatic influence the pressure and flow of wells might be expected to remain comparatively constant but both flow and pressure decrease with time and continued development.

Oil is found in proximity to sealed faults where water circulation would evidently be prohibited; also in dry synclines indicating accumulation without water agency.

Hydraulic Theory Disqualified

The foregoing data tend to disqualify the hydraulic theory of oil migration and accumulation.

If water circulation is inadequate, thus rendering all of the four popular theories of oil migration incompetent, to what agency may be ascribed the phenomenon of accumulation?

Geologists who accept the origin of petroleum as organic, generally agree that heat and pressure in the sediments were largely responsible for the generation of oil and gas but they seem to have carried the thought no further.

The gas generated with the oil in every tiny pore, expanding with continued and increasing heat would furnish a transporting agency for the oil from its very inception, without the necessity of calling upon an alien force whose presence might be questioned and whose advent might be barred by depth and density of source rocks.

This native-born agent, with its property for continuous expansion, its ability to dissolve in oil, its qualification of buoyancy would be enabled to furnish a continuous and ever-present carrier for petroleum from the point of its creation to its final resting place in the pool, without the aid of any other power.

With oil and gas evolved in the sediments by dynamo-chemical activity, which was intensified with continued folding and increasing heat, over long periods of time we have a process comparable to that of "cracking stills."

"Cracking Stills"

The successive evolutions in these gigantic stills would become more and more gaseous, and the oils lighter and lighter as the intensified dynamo-chemical activity affected the less readily altered material; thus the quality of oil would depend largely upon the amount of heat and pressure to which it had been subjected. Experiments indicate conclusively that the amount of dissociation and the position of splits within the molecules of organic fats are controlled by temperature and pressure. This position of the split within the molecule is presumed to dominate the nature of the product. Where the temperature of distillation was too high only coke and gases were obtained. This would represent the region of greatest heat near upheaval where is found gas without oil.

Distillation at temperature below 400°, with high pressure gave the most oil and the least coke and gases. This represents a region further from the center of disturbance where a lesser degree of heat was developed but still subjected to considerable pressure; this is the region of greatest oil accumulation. All this conforms with field conditions.

The effect of dissolved gas upon the viscosity and surface tension of crude oil is greatly influenced by heat and pressure. At a temperature of 70° F. and a pressure of 500 pounds natural gas would reduce its viscosity to almost equal that of kerosene.

Surface tension is also affected by pressure, being reduced about 20 per cent when crude oil, saturated with gas, is subjected to pressure of from 400 to 500 pounds thus rendering its passage through pore space much easier.

Gas Energy

By laboratory experiments gravity and capillarity alone have not produced the relations as observed in the field. Without gas in test tubes only small accumulation of oil in pore spaces was obtained throughout the entire length of the tube. With gas in the test tubes the oil was segregated in the upper portion of the limbs of the tube, with gas at the crest with a sharp line of demarcation separating the oil and the water. The volume of oil moved exceeded the volume of the gas.

In experiments with gas, oil and water in sand the gas blew out; oil was propelled into the anticline, accumulating around the point where the gas was escaping; oil was propelled ahead of the water. The comparatively high absorption capacity of oil and its tendency to remain entangled with the flowing and expanding gas appears to be largely responsible for its effective propulsion.

Thus gas, intimately associated with the oil at its source, with a capacity for continued expansion under influences developed by earth movements, would be able to reduce viscosity and surface tension of the crude oil and to propel it in the direction of least resistance.

The buoyancy of gas would bring oil from lower regions in all directions to the highest points available—probably anticlines, though not necessarily so. In case the fissuring had occurred in a locality from which the oil-laden gas could not force its way to an anticline it would accumulate in the highest place to which it could attain. In the vicinity of sealed faults, cemented areas, impervious and pinching strata, the migration might be hindered to the extent that accumulation would occur at that point.

Fissures and Faults

Fissures and faults undoubtedly furnish channels for most abundant transportation of oil but porous beds probably are also utilized.

The Appalachian Field is mentioned as unfaulted but it is extensively jointed which would suffice for passway for oil and gas. In this region the segregation of oil above the water is incomplete, probably due to hindered and diverted passage through joints and the consequent dissipation of direct gas pressure.

Faults for oil migration need not be evident at the surface in order to be effective, as many folds are broken and faulted in the lower strata.

An absence of faulting may be the explanation of the failure of apparently competent structures to afford production.

No doubt great quantities of gas and much oil have been lost through fissures extending to the surface.

On reaching cooler regions the heated oil and gas would tend to segregate as would also the water from the accompanying vapors, as there was probably much moisture buried in the sediments with most of the carbonaceous material and driven out with the oil and gas. Organic detritus from which the moisture had been evaporated before burial might account for oil without water, as in the synclines of the Appalachian Field. Gas would carry oil to the highest place available but, upon segregation, the oil would settle, by gravity, to lower places if there were no water to support it.

Accumulation of heated oil and gas explains the still present heat of many producing structures.

Continued expansion of gases due to heat still retained by the oil and gas when the pool was sealed explains the tremendous pressure of some pools, and the gradual decline in pressure with development which is unexplained under other theories.

Oil Accumulation

Similar accumulations of oil and gas by the same methods have probably occurred during the diastrophic movements of every period whose sediments contained sufficient organic detritus to generate oil and gas. Oil accumulations are found in the rocks of the age during which diastrophic disturbances occurred. The folds of these deformations—often covered by unconformable sediments—furnish the oil of the deep pools. Depth has contributed to retention of the heat, which, with pressure, has evolved gas in the sealed pools thus developing great pressure therein. Such pressure could scarcely be attributed, even by hydraulic advocates, to hydrostatic influence at a mile depth, in view of the fact that no water from the surface is believed to reach these deep formations.

Finally, when the bit has penetrated the cover-rock the percentage of oil recovery from the pool is largely dependent upon the amount of gas pressure present. Recognition of the importance of this factor is responsible for most of the present agitation for gas conservation. So the same agency responsible for the migration and accumulation of the petroleum in the beginning is still the main dependence for its propulsion onward to the realm of human activity.

INDEPENDENT PRODUCERS ASK TARIFF ON CRUDE

(Continued from Page 30)

entire business structure of both the oil-producing states and of those dependent upon the coal industry as well as all labor connected with these industries.

"And, therefore, be it further and finally resolved that we again point out to the purchasers of oil who are also producers and importers of foreign oil that if imports should be permitted to demoralize the domestic petroleum industry and thus destroy the conservation program, they must be prepared to take responsibility for the debacle which may ensue."

Wirt Franklin's Advocacy

After calling the assemblage to order the chairman, Mr. Franklin, stated the purpose of the meeting and reviewed the history of the conservation movement of the past several years, and called special attention to the meeting of governors of oil-producing states held in Colorado Springs, Colo., last June, which meeting Mr. Franklin said was responsible for the birth of the Independent Petroleum Association of America.

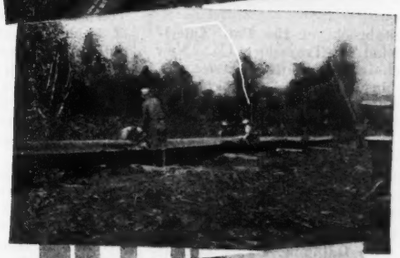
Colorado Springs Meeting

Mr. Franklin said that at the Colorado Springs meeting he became an advocate of a tariff on oil and he concluded that the only way to obtain a tariff was through an organization of oil men nation-wide in scope. He could not expect the American Petroleum Institute or the Mid-Continent Oil and Gas Association to make the fight, because those organizations, which are and have been doing a great service to the oil industry along other lines, are composed of tariff advocates and antitariff advocates, and it would not be wise to split them up into factions. Therefore, he decided on the organization of the Independent Petroleum Association of America which would have as its prime objective the protection of the oil industry by a prohibitive tariff on imports of oil products and an adequate tariff on crude petroleum.

Mr. Franklin in presenting the need for a tariff said that 300,000 oil wells in this country were producing 350,000 bbls. of oil, an average of about 1.17 bbls. per day. These strippers, he said, are the backbone of the industry. For two years they have been operated at a loss. Many wells of this producing capacity have been plugged and abandoned. It is not true conservation to create and maintain a condition that causes the abandonment of these wells. True conservation would save this 350,000-bbl.-a-day production and give it every protection.

Answers Arguments

One argument advanced against a tariff on oil, Mr. Franklin said, is that it would affect our exports by reason of the fact that the imported oil now refined in the United States and then exported would be refined in foreign countries and shipped direct to our present export markets. He said this was already being done. Two large refineries with a capacity of over 200,000 bbls. a day of crude oil have been constructed in the Dutch West Indies and are being operated on Venezuelan crude, and the refined product thrown upon the American



They first made sure of the Right Pipe!

IT is a costly job to lay several lines of pipe across a stream—costly in time, labor, and extra material and equipment involved. Experienced engineers know just where to begin in making certain that the investment will be properly safeguarded. They first make sure of the right pipe—knowing that this is the foundation of successful submerged pipe lines.

The photograph above shows one of the crossings of a 200 mile, 18-inch, NATIONAL Pipe line. Laying of this line involved crossing the Mississippi and four other rivers in addition to swamps, stretches of gumbo, etc.—a job requiring sound engineering practice and reliable materials.

The extensive use of NATIONAL Pipe for lines involving exceptional engineering difficulties is substantial evidence of the dependability of this product for installation where future repairs would be costly with possible extended delay of service. Dependability under all conditions of service is the first requirement in the manufacture of NATIONAL Pipe—one of the reasons why NATIONAL is

AMERICA'S STANDARD WROUGHT PIPE

NATIONAL TUBE COMPANY · Pittsburgh, Pa.
Subsidiary of United States Steel Corporation

NATIONAL PIPE

and foreign markets in direct competition with American-made oil products. These refineries are run on cheap crude and are operated with cheap labor, he said. In comparing imports with exports, Mr. Franklin said that if we subtract the total California exports to Asia and South America and our exports to Canada, which he considered as practically a domestic market, the remaining exports are about on a level with our crude and refined imports, and that there was no advantage in this to the oil industry as a whole. The argument that a tariff would raise the price of gasoline to the consumer, he answered by saying that while the average price of crude oil is much lower than in 1926 the average price of gasoline and lubricating oil to the consumer had not been lowered proportionately.

South American Exploration

Mr. Franklin said that while everything was being done to discourage oil exploration, or wildcatting, in the United States, the South American countries from the northern coast down to Patagonia were being explored on a large scale and at tremendous expense. In his opinion, he said, every country in South America is a potential oil region. "If we are to continue to curtail our production until the oil resources of South America are exhausted we will curtail ourselves out of business," he said.

Mr. Franklin said that a tariff on oil would not interfere with the present conservation movement. The enormous potential production of the country would necessitate keeping a part of the oil in the ground to be withdrawn as needed.

Mr. Franklin expressed indignation at the report of the committee of Texas oil men who interviewed W. S. Farish, president of the Humble Oil & Refining Co. He accused them of losing their courage when they crossed the threshold of Mr. Farish's office. The statement that "your committee believes that relief in the immediate situation must be had, if at all, through curtailment instead of through tariff action," and that "your committee believes that the oil industry in the United States would not very greatly improve its present acute needs by an oil tariff," nettled Mr. Franklin, who claimed that both curtailment and a tariff are necessary in the life of the American oil industry.

Mr. Franklin expressed the belief that the oil tariff advocates could win the sympathy and co-operation of Senator Borah and other western senators and that they could convince southern senators of the soundness of their cause. He said that if the western and southern senators could be won over the oil men could either get a tariff on oil or, failing in this, could prevent the passage of any tariff bill.

America's Oil Resources

James H. Gardner, geologist, and president of the Gardner Petroleum Co., Tulsa, expressed the opinion that the oil resources of the nation would last a long time. He quoted the discouraging prophecies made by geologists at various times in the past 15 years all of which had been wide of the mark. Ralph Arnold, he said, in 1914, gave the oil reserves of the United States as 5,700,000,000 bbls., but that we have since produced 9,178,000,000 bbls. with present known production higher than it has ever been. In 1915, the United States Geological Survey gave the potential oil resources as 7,600,000,000 bbls., but Mr. Gardner said we have since produced 8,912,000,000 bbls. In 1918, David White figured oil resources at 6,700,000,000 bbls. and we have since produced 7,994,000,000 bbls. Mr. Gardner expressed himself in favor of a tariff.

Pat Malloy's Address

Pat Malloy, of Malloy & Co., Tulsa, with oil interests in Oklahoma and Arkansas, read a prepared address which was frequently interrupted by applause. Mr. Malloy's paper is given in part below:

"It shall avail nothing but loss to the Mid-Continent manufacturer that he reduce his still runs when gasoline importations from Venezuela alone were permitted to increase nearly three-fold in the single year of 1929, the year of our most effective conservation. It would only decrease his volume without reducing his investment or overhead, since all the gasoline which he refrained from making under the present policy would be made up by increased gasoline imports. What he fails to supply will be supplied by the advocates of his shutdown and at a lesser cost to them and from their own foreign plants.

"Gasoline ready for market in the first nine months of 1929 reached the American market, free of any duty, from the mammoth plants of the Dutch-Shell and the Pan-American located in the Dutch West Indies, at the alarming rate of 600,000 bbls. per month, whereas in 1928 in the same period there was shipped only a little more than one-third of that amount. These two modern equipped plants have a combined crude capacity of 250,000 bbls. a day—a capacity that almost equals the actual present-day producing capacity of the refineries of Oklahoma, Kansas and Missouri.

"While Oklahoma City was shutting in hundreds of thousands of barrels per day during the year 1929, crude imports free of all duty increased 4,000,000 bbls. over 1928, and total gasoline imports were something like twice as much as they were in the previous year. The Venezuela production alone, thanks to the policy of the free market, stood at the end of the first 10 months of 1929 at nearly 114,000,000 bbls., an increase of 30,000,000 bbls. over the same period of the previous year, 1928. The source of this commerce yields nothing of taxation nor of revenue nor of value to the nation or its subdivisions. It yields nothing except depression and unstability to the petroleum industry and therefore the country."

Cranfill Starts the Fund

Tom Cranfill of Dallas, Tex., and Joe Danciger of Fort Worth, delivered enthusiastic speeches in favor of a tariff and the organization of the movement to keep the campaign alive until success is attained. Mr. Cranfill started the financial ball rolling by stating he would be one of 100 men to give $1,000 to the association to carry on the work, and Mr. Danciger said he would subscribe $5,000 there and then and add as much to it as was necessary and following this pledges were asked. L. H. Wentz of Ponca City added $2,000 to the fund, after which the contributions became general until more than $45,000 was pledged at the meeting. President Franklin urged everybody present to work for a big delegation to Washington.

PANHANDLE FIELDS

(Continued from Page 64)

to a total depth of 1,505 feet and had an initial production of 6 bbls. Maddox and others' No. 1 Williams was drilled to a total depth of 1,845 feet and was and was dry and abandoned.

Eastland County

Butler's No. 1 Green topped the lime at 3,915 feet, was drilled to a total depth of 3,994 feet and was dry and abandoned at that depth.

Mills County

Martin and others' No. 1 Martin was drilled to a total depth of 1,125 feet was dry and abandoned.

Shackelford County

J. W. Ducker's No. 1 Matthews was drilled to a total depth of 1,003 feet and was dry and abandoned.

Stephens County

Lone Star Gas Co.'s No. 5 Elliott Ross made 500,000 feet of gas at 2,695-3,700 feet and was drilled to a total depth of 3,907 feet.

DEATH OF WILLIAM F. BRICE

William Fletcher Brice, aged 65, died recently at his home at Hollywood, Calif. Mr. Brice was born and reared in Texas and engaged in the oil business at Beaumont, being active in the Spindletop development. He also participated in the Sour Lake boom and had holdings at Goose Creek, Tex. He operated in Southwest Texas and had oil and pipe line interests in Kentucky. He was at Wichita Falls and Ranger during the peak of activities in those areas.

Foster Petroleum Corp. Holdings Acquired by Indian Territory Co.

NEW YORK, Feb. 3.—Henry L. Doherty & Co. announce that negotiations have been completed subject to stockholders' action, for acquisition of oil and gas holdings in the Oklahoma City Pool from the Foster Petroleum Corp. by the Indian Territory Illuminating Oil Co., subsidiary of Cities Service Co.

Foster Petroleum Corp.'s interest in the wells already drilled in the Oklahoma City Field have a potential production exceeding 95,000 bbls. daily, the announcement said, and when combined with those completed by the Indian Territory company will bring the companies' combined total production in the Oklahoma City Pool to approximately 400,000 bbls. daily.

"The Cities Service interests acquired a majority interest in the Indian Territory Illuminating Oil Co. in 1912 from the late T. N. Barnsdall," Henry L. Doherty said in explanation of the transaction. H. V. Foster, in addition to his other interests, has always owned a large minorty interest in the Indian Territory company. He will retain these holdings and in the future will devote his efforts to the development of the latter company. With this acquisition, the Indian Territory Illuminating Oil Co. will become one of the most important subsidiaries of Cities Service Co.

The price paid for the property acquired from the Foster Petroleum Corp. was not announced.

EASTERN PRODUCTION DIVISION AT PITTSBURGH

DALLAS, Tex., Feb. 3.—Members of the Eastern District of the American Petroleum Institute's Division of Production will meet April 7 in the William Penn Hotel at Pittsburgh, Pa., Secretary Carl A. Young announced today. The program calls for an all-day conference on subjects pertaining to petroleum field works and for election of officers.

E. L. Estabrook, of the Pan American Petroleum & Transport Co., New York, is chairman of the district. J. French Robinson, of the Peoples Natural Gas Co., Pittsburgh, is secretary.

The following papers are listed on the program:

"Storing of Gas (Natural and Artificial) in Old Oil and Gas Fields," S. W. Meals, president, Carnegie Natural Gas Co., Pittsburgh, Pa.

"Core Studies," Eugene A. Stephenson, associated with Ralph E. Davis, consulting engineer, Pittsburgh, Pa.

"Oil and Gas Reserves," H. R. Pierce, associated with Dunn & Lewis, Pittsburgh, Pa.

"Economical Operation of Small Oil Wells," P. H. Curry, South Penn Oil Co., Pittsburgh, Pa.

It is expected that copies of the papers will be ready for distribution March 1 and that they will be sent to various people for discussion.

WEST TEXAS FIELDS

(Continued from Page 63)

21, Block 34, Township 2s, T.&P. Survey.

Bashara's No. 2 fee, 990 feet from the south and 2,310 feet from the east of Section 17, Block B-3, is averaging around 65 bbls. daily at a total depth of 3,087 feet. The first gas in this semi-wildcat test was found at 3,008-10 feet, with a showing of oil, and an increase in oil was found at 3,030 feet. The well filled up and slopped over while drilling below this depth. It will be put on the pump. This well is approximately 4 miles northeast of production in the Hendricks Pool, and paves the way for other tests in the vicinity.

Toborg Pool

The shallow Toborg Pool in Section 539, Arnold and Barrett Survey, northwest of the Yates Field, Pecos County, completed two more wells of 300 bbls. daily capacity, making three producers in this area which was opened by the Cardinal Oil Co.

The most southerly location of the Powell (World) Pool, Crockett County, is showing up as a disappointment and is shut down for orders, after filling up 450 feet with fluid, half oil and half water. This well is Empire Gas & Fuel Co.'s No. 1 Shannon, in Section 42, Block BB, E.L.&R.R. Survey. Total depth of the hole is 2,660 feet. It filled with sulphur water and was plugged back to 2,640 feet and shot with 50 quarts from 2,615-30 feet, and started filling with fluid after the shot. This test probably marks the southern limits of this pool.

WEST TEXAS COMPLETIONS
Week Ended February 1
Crane County

Church & Fields' No. 1 Collett-University was drilled to a total depth of 3,118 feet, topped the pay at 3,000 feet, was shot with 230 quarts at a depth of 3,000-3,118 feet and had an initial production of 150 bbls. the first 15 hours. Tidal Oil Co.'s No. 3 University-E, 330 feet north and east of the SW cor. E half of NW Section 39, Block 30, University Land, was drilled to a total depth of 3,004 feet, topped the pay at 2,895 feet, was shot with 110 quarts at 2,896-3,004 feet and had an initial production of 50 bbls. the first 12 hours.

Crockett County

Cushing Refining & Gasoline Co.'s No. 3 Powell, located 330 feet from south and east of Section 53, Block BB, G.C.&S.F. R.R. Survey, was drilled to a total depth of 2,538 feet, topped the pay at 2,486 feet and had an initial production of 123 bbls.

Ector County

Landreth Production Corp.'s No. 1-S University, located 990 feet south and 440 feet west of NE cor. of Section 2, Block 35, had an initial production of 840 bbls. at 3,598-3,662 feet.

Glasscock County

Amerada Petroleum Corp.'s No. 1 Coffee, located 990 feet from north and 2,310 feet from west of Section 22, Block 33, Township 2s, had an initial production of 5 bbls. hourly at 2,187-2,264 feet, a potential production of 1,632 bbls. and a proration allowance of 490 bbls. Kirby Oil Co.'s No. 2 Baker was drilled to a total depth of 2,281 feet, topped the pay at 2,160 feet, had a potential production of 1,273 bbls. and a proration allowance of 381 bbls.

Howard County

Continental Oil Co.'s No. 13-A Clay, located 1,980 feet south and 200 feet west of NE cor. of Section 139, Block 29, W. &N.W.R.R. Survey, was drilled to a total depth of 1,944 feet, was plugged back to 1,850 feet, shot with 30 quarts at 1,820-35 feet and had an initial production of 15 bbls. Laurel & Cosden's No. 12 Roberts had an initial production of 38 bbls. at 2,508-2,690 feet. Their No. 16 Roberts had an initial production of 18 bbls. at 2,520-2,667 feet. Schermerhorn Oil Co.'s No. 7 Roberts-A, located 2,490 feet from north and east line of Section 137, Block 29, W.&N.W. Survey, had an initial production of 16 bbls. at 1,355-65 feet.

Mitchell County

California Co.'s No. 8 Foster, Lease No. 1, located 1,100 feet south and 990 feet west of NE cor. Section 6, Block 29, Township 1s, T.&P. Survey, was dry and abandoned at 3,140 feet after making 10 bbls. of salt water at 3,035-40 feet.

Presidio County

T. P. Coal & Oil Co.'s No. 1 Bogel, located 330 feet south and west of NE cor. of Section 83, Block 8, G.H.&S.A. Survey, was dry and abandoned with a hole full of water at 4,365 feet.

Pecos County

Cardinal Oil Co.'s No. 2 Torborg, located 750 feet from south and 150 feet from east of W half of Section 539, A.&B. Survey, had an initial production of 15 bbls. at 316-410 feet. Cardinal Oil Co.'s No. 3 Torborg, located 714 feet from east and 150 feet from south of W half of Section 539, had an initial production of 300 bbls. daily at 326-413 feet. Lan-

dreth Production Corp.'s No. 1 University-I, located 330 feet from south and west of NE cor. of Section 24, Block 18, had an initial production of 4 bbls. daily at 960-1,095 feet.

PECOS COUNTY
Week Ending January 28

Company, lease—	Wells	Bbls.
M. H. Black:		
Fee	1	10
California Co.:		
Yates—Lease 1	19	9,467
Smith—Lease 1, Sec. 37	5	514
Smith—Lease 1, Sec. 23	8	2,478
Smith—Lease 1, Sec. 21	5	878
Smith—Lease 2	3	91
Smith—Lease 3, Sec. 26	13	2,499
Smith, Sec. 16	2	11
Tippett—Lease 1	1	39
University	1	48
Cardinal Oil Co.:		
Torborg	2	450
Continental Oil Co.:		
Yates-A	4	525
Salvage		3,073
University-A	4	256
Cosby Drilling Co.:		
Smith	2	385
Cranfill-Reynolds:		
Masterson	1	25
Dorn & McGee:		
Pecos Valley	1	23
Grayburg Oil Co.:		
Pecos River Bed	6	355
Salvage		131
Gulf Prod. Co.:		
All leases	44	18,219
Henshaw Oil Corp.:		
University	1	39
Humble O. & R. Co.:		
Smith-A	12	2,089
Smith-B	7	1,093
Kirby Pet. Co.:		
Tippett	2	59
Kirby Pet. and Edson:		
Tippett	1	331
McCarty Oil Co.:		
Gray	1	10
Bennett	1	8
McMan O. & G. Co.:		
Smith-A	1	1,211
Smith-B	4	1,493
Smith-C	9	851
Tippett	3	278
Richardson	2	119
McMan and Continental:		
Yates	17	5,748
Mid-Kansas and Transcontinental:		
Yates-A	28	21,822
Yates-B	27	7,233
Salvage		170
Yates-C	11	8,401
Salvage		164
Yates-D	7	8,273
Yates-E	3	748
Yates-F	4	875
Yates-G	3	1,289
Yates-H	10	9,240
Smith	6	2,498
Smith-Taylor	19	4,272
Landreth Prod. Co.:		
University-A	5	2,855
University-C	3	874
University-D	3	26
University-E	1	123
University-F	2	71
University-G	3	142
University-H	1	16
University-I	1	1
Landreth and World:		
University-B	6	1,724
J. D. O'Mara:		
Butz	1	16
Pecos Valley Oil:		
Fee, Sec. 22, Blk. 26	3	46
Phillips Pet. Co.:		
Monroe	2	104
Ramsey	4	839
Smith	3	639
Plymouth Pet. Corp.:		
Perry	1	27
Red Bank Oil Co.:		
Smith	5	592
Savoy & Mazda:		
Smith	3	688
Shell Pet. Corp.:		
Tippett	11	2,457
Smith-A	11	1,340
Smith-B	1	663
Smith-D	4	813
Smith-E	1	25
University-Bower-C	4	553
Simms Oil Co.:		
Smith	7	7,065
Skelly Oil Co.:		
Tippett	2	221
Taylor-Link Oil Co.:		
University	11	983
Transcontinental Oil Co.:		
Mathews	1	150
World Oil Co.:		
University	1	15
Total Pecos Field	402	141,375

Daily Average Production by Leases

WINKLER COUNTY
Week Ending January 28

Company, farm, Sec., block—	Wells	Bbls.
Amerada Pet. Corp.:		
Cowden, 3, B-12	3	20
Atlantic O. P. Co.:		
Hendricks-A, 34, B-2	8	1,565
Hendricks-B, 44, 26	6	565
Hendricks-D, 29, B-5	7	453
Hendricks-E, 41, B-5	5	529
Hendricks-G, 46, 26	1	11
Hendricks-F, 40, 26	12	486
Bankers Prod. Co.:		
Hendricks, 30, B-5	1	....
V. T. Bolin:		
Brown-Altman, 4, B-5	1	....
California Co.:		
Hendricks, 29, B-5	7	499
Continental Oil Co.:		
Hendricks, 33, 26	4	599
Hendricks-A, 29, 26	1	66
Hendricks-B, 34, 26	2	....
Cranfill & Reynolds:		
Hendricks-A, 28, B-5	2	229
Hendricks-B, 33, B-5	1	59
Hendricks-C, 33, 26	2	248
Hendricks-E, 33, 26	2	100
Cranfill & Texon:		
Hutchings, 47, 26	2	330
Culberson Bros.:		
Hendricks, 40, B-5	1	50
Eastland Oil Co.:		
Hendricks, 35, B-5	2	325
Hendricks-B, 46, 26	1	127
Gulf Prod. Co.:		
Hendricks-A, 34, B-5	13	4,435
Hendricks-B, 45, 26	11	2,820
Hendricks-C, 40, B-5	6	369
Hendricks, 44, 26	3	655
Cowden, 3, B-12	3	91
Humble O. & R. Co.:		
Hendricks-A, 34, B-5	16	3,671
Hendricks-B, 29, B-5	6	1,264
Hendricks-C, 32, 26	8	410
Hendricks-D, 41, 26	1	332
Hendricks-B, 39, 26	3	158
Hendricks-C, 10, B-12	13	5,841
Walton, 8, 26	1	71
Independent O. & G. Co.:		
Hendricks-A, 34, B-5	7	748
Howe-B, 44, 26	3	104
McCabe, 36, B-5	2	153
Vardeman-B, 41, B-5	5	200
Lion Oil Co.:		
Hendricks-A, 41, B-5	11	1,195
Hendricks-B, 34, B-5	13	1,659
Hendricks-C, 45, 26	14	3,754
Hendricks-D, 44, 26	1	62
Magnolia Pet. Co.:		
Hendricks, 29, B-5	8	367
May Prod. Co.:		
Hendricks, 34, 26	1	10
American Maracaibo:		
Hendricks-A, 28, B-5	1	18
Hendricks-B, 28, B-5	2	80
Mining & Engineering:		
Hendricks, 10, B-12	1	....
Murchison & Cranfill:		
Hendricks-A, 35, B-5	2	217
Hendricks-B, 35, B-5	3	324
Hendricks-C, 35, B-5	1	....
Hendricks-H, 35, B-5	1	433
Hendricks-I, 34, 26	1	57
Republic Prod. Co.:		
Hendricks-A-B, 45, 26	12	1,324
Hendricks-C, 41, B-5	5	90
Prairie O. & G. Co.:		
Hendricks, 40, 26	6	1,029
Cowden, 3, B-12	6	1,292
Shell Pet. Corp.:		
Hendricks-A, 45, 26	6	851
Hendricks-B, 29, B-5	6	1,867
Hendricks-C, 29, B-5	8	298
Hendricks-D, 41, B-5	6	71
Hendricks-E, 40, B-5	3	75
Hendricks-F, 46, 26	8	181
Hendricks-G, 39, 26	1	58
Shell-The Texas Co.:		
Cowden-A, 3, B-12	6	1,039
Hendricks, 45, 26	6	2,146
Hendricks-A, 29, B-5	11	604
Hendricks-B, 40, 26	6	59
Hendricks-C, 40, 26	6	1,030
Hendricks-D, 40, 26	6	185
Hendricks-E, 39, 26	4	53
Skelly Oil Co.:		
Hendricks, 40, 26	12	2,513
Hendricks-B, 10, B-12	2	17
Hendricks-C, 30, 26	1	53
Southern C. O. P. Co.:		
T-67 Hendricks-A, 42, B-5	3	98
T-67 Hendricks-3-A, 4, B-12	5	269
T-67 Hendricks-B, 44, 26	5	310
T-67 Hendricks-3-B, 33, 26	5	395
T-67 Hendricks-C, 33, B-5	5	445
T-67 Hendricks-D, 27, 26	5	833
T-67 Hendricks-E, 42, B-5	4	98
T-67 Hendricks-F, 33, B-5	5	405
T-68 Hendricks-3-A, 35, B-5	3	100
T-68 Hendricks-B, 46, 26	2	124
T-88 Hendricks-A, 44, 26	6	520
T-88 Hendricks-B, 4, B-12	4	67
T-88 Hendricks-C, 28, B-5	8	964
T-88 Hendricks-D, 4, B-12	6	1,384
T-88 Hendricks-H, 28, B-5	7	535
T-88 Hendricks-I, 20, B-5	7	362
T-88 Hendricks-J, 30, B-5	5	412
T-88 Hendricks-K, 41, 26	7	816
T-88 Hendricks-L, 4, B-12	4	190
T-88 Hendricks-M, 35, 26	33	8,955
T-88 Hendricks-N, 28, 26	7	2,041
T-88 Hendricks-O, 22, 26	4	452
T-88 Hendricks-P, 23, 26	2	262
T-88 Hendricks-Q, 27, 26	2	744
T-88 Hendricks-R, 27, 26	3	2,436
T-88 Hendricks-S, 34, 26	4	2,713
T-88 Hendricks-T, 34, 26	7	563
T-88 Hendricks-U, 41, 26	10	930
T-88 Hendricks-V, 29, 26	1	41
T-88 Hendricks-W, 5, B-12	1	182
T-88 Hendricks-CX, 21, 26	4	830
T-89 Hendricks-A, 45, B-5	3	186
T-89 Hendricks-B, 35, B-5	2	315
T-89 Hendricks-C, 35, B-5	3	511
T-89 Hendricks-D, 35, B-5	1	144
T-89 Hendricks-E, 40, B-5	3	124
T-89 Hendricks-F, 40, B-5	2	248
T-89 Hendricks-H, 46, 26	2	124
T-89 Hendricks-I, 10, B-12	2	46
T-89 Hendricks-J, 9, B-12	8	619
T-89 Hendricks-L, 15, B-12	2	180
T-90 Hutchings, 47, 26	2	343
Texon O. & L. Co.:		
Hendricks-A, 41, B-5	6	110
Hendricks-B, 45, 26	6	1,635
Total Hendricks Pool	575	84,316

Leck Area

Atlantic-Kesslar & Logan:		
Leck, 3, 74	2	88
Amerada Pet. Corp.:		
Leck, 3, 74	2	211
Empire G. & F. Co.:		
Daugherty, 3, 74	3	55
Magnolia Pet. Co.:		
Scarborough, 1, C-22	2	149
Gulf Prod. Co.:		
Scarborough, 1, C-22	1	51
Daugherty, 3, 74	1	380
Shell-Llano Oil Co.:		
Daugherty, 1, C-22	5	257
Shell-Danciger:		
Daugherty, 3, 74	2	55
Skelly Oil Co.:		
Daugherty, 22, 16	4	993
Tidal Oil Co.:		
Scarborough, 1, C-22	1	65
Prairie O. & G. Co.:		
Leck, 16, 74	1	318
Daugherty, 3, 74	1	140
Scarborough, 1, C-22	1	60
Warner-Quinlan:		
Leck, 3, 74	1	385
Total Leck Pool	27	3,207

O'Brien Pool

Continental Oil Co.:		
Morton-A, 10, B-12	1	33
Morton-B, 10, B-12	2	86
Wentz Oil Corp.:		
Morton, 10, B-12	1	65
Simms Oil Co.:		
Sealy, 50, F	1	15
Richardson et al:		
Stockton, 50, F	1	35
Total O'Brien Pool	6	234
Grand Total Winkler County	608	87,807

PIPE LINE RUNS
January 15 to January 22
Runs Through Trunk Lines

	Last period
Atlantic P. L. Co., Port Arthur	26,000
Gulf P. L. Co., to coast via Ranger	21,632
Humble P. L. Co., Comyn, Tex.	37,307
Humble P. L. Co., Ingleside	30,047
Illinois P. L. Co., Del Rio, Tex.	42,712
Magnolia P. L. Co., DeLeon, Tex.	7,270
Pasotex P. L. Co., El Paso, Tex.	8,835
Shell P. L. Co., to Healdton, Okla.	36,742
Shell P. L. Co., to Houston, Tex.	20,399
The Texas Co., Houston, Tex.	11,720
Total	242,664

Tank Car Shipments

Landreth Prod. Corp., Crossett	100
Reagan County Pur. Co., McCamey	....
Thomas & Brann, Grant City	100
Orient Co., McCamey	75
American Pet. Co., Pyote	....
Southern C. O. P. Co., Wickett	14,914
Total	15,189

Runs to West Texas Refineries

Bluebonnett Ref. Co., Wickett	....
Burford Ref. Co., Pecos	3,523
Col-Tex Ref. Co., Colorado	7,000
Cosden Ref. Co., Big Spring	3,634
Great Western Ref. Co., Big Spring	3,384
Humble O. & R. Co., McCamey	4,727
Mid-Tex Ref. Co., Midland	1,175
Tonkawa Ref. Co., Pyote	1,745
Big Spring Ref. Co., Big Spring	1,970
Richardson Ref. Co., Big Spring	5,585
Wickett Ref. Co., Pyote, Tex.	....
Total	32,743

Summary

	Last period	This period
Pipe line runs through trunk lines	260,357	242,664
Tank car shipments	14,992	15,189
Runs to West Tex. refineries	28,541	32,743
Total daily distribution	303,890	290,596
Total daily production	335,372	335,622
Daily average from storage	31,482	45,026

ELECTRIC CORING METHOD DEVISED BY ENGINEERS

(Continued from Page 33)

pending upon the local conditions and desire for information.

The high metallic conductivity of the casing prevents observations on the electrical resistivities of formations traversed by the cased portion of the drill hole, but measurements can be taken from the bottom of the casing down.

Lithological Data Correlated

In fields where ample geological information was already available, it has been found possible to correlate accurately the lithological data with the electrical results so that a correspondence between these two could be established. This was the case in several fields in Europe and South America.

The work done thus far in several wells near Seminole, Oklahoma City and other points in Oklahoma and Kansas has demonstrated the possibility of correlating numerous electrical key horizons in Mid-Continent oil fields with considerable accuracy. The future of the process in this area seems to depend chiefly upon the use which the geologists will make of these existing electrical markers.

A slightly different technique can be applied in favorable cases to determine the dip of concealed strata. It consists of passing an electric current into a relatively conductive stratum and then noting its point of emergence at the surface. This point will give an indication of the dip (see Figure 2).

Since the percentage of water contained in any given stratum determines its conductivity, as already noted, and as oil and gas are nonconductors, then a formation saturated with oil, gas or both offers high resistance to the flow of current. In one well logged by this method it was quite easy to trace on the two logs from adjoining wells the places where a sand was saturated with oil in one place and water in another.

Discontinued Cores Completed

Discontinued cores can be completed by an electrical log so as to characterize all the beds traversed and determine their thicknesses. The cost per foot decreases as the length of the electrical log (the length of the uncased hole) increases. Electrical exploration in the drill holes is especially useful when, for one reason or another, no special attention is paid to obtaining cores (rotary and churn drills).

The electrical logging device makes possible the correlating of horizons traversed by wells put down through formations lacking geological key beds. When the lack of fossils, or of differentiating lithologic features, renders the diagnosis of the sediments uncertain and difficult, there still remains the possibility that some good electrical key horizons exist which will allow a precise correlation to be made.

A consequence of the electrical correlations is that it permits, as in the case with good geological correlations, the location of faults and the measurements of their throw. The high electrical resistivity of oil may be used, in certain cases, to discover the depth and thickness of missed oil sands. While much research work remains to be done in this connection, valuable results already are reported to have been obtained. In the same way, there exist great possibilities as to the location of the water flows.

In modifying slightly the electrical arrangement used at the drill hole, it is possible to discover the dip of the strata at given depths in the drill hole and outlining equipotential curves at the surface.

RECENT OPERATIONS OF EUROPEAN WAX CARTEL

(Continued from Page 32)

ports, exports and re-exports of paraffin wax for the month of October, 1929, and for the ten months' period:

	1927	1928	1929
Imports—	Cwts.	Cwts.	Cwts.
Month of Oct...	181,515	134,970	139,667
10-month period.	1,242,173	1,358,276	1,197,632
Exports—			
Month of Oct...	21,192	12,663	17,366
10-month period.	145,942	136,705	156,265
Re-exports—			
Month of Oct...	21,283	22,210	28,252
10-month period.	135,404	194,706	278,543

Cartel System Abroad

While the cartel system as applied to many commodities has been utilized abroad for many years and there applies to domestic as well as export markets, the nearest approach to this form of organization in the United States is a Webb-Pomerene Export Act corporation, which, as its name indicates applies only and specifically to corporations or associations of corporations organized for export marketing.

In the United States the Petroleum Export Association, Inc., whose membership includes some 17 of the major companies, some of whom are understood to be inactive in that export quotas have not been allotted or accepted, has functioned for so short a time as to make impossible a worth while opinion as to its effectiveness and usefulness to the industry at large. General opinion seems to be that it has had a stabilizing effect on export prices which in turn has reacted to the national advantage of practically all domestic refineries.

Recently there has also been formed a Carbon Black Exporters Association in the United States while rumors are now heard of a similar combination of Pennsylvania refiners to control export sales of Pennsylvania grade lubricants. An equal opportunity appears to exist for a combination of natural gasoline manufacturers for export.

Such an organization could accomplish much in co-operatively promoting the use

of natural gasolines and blends abroad while exercising a marked stabilizing effect on export gasoline prices in general.

Europe affords a ready precedent to follow. The Benzine Producers of Europe is a ready example with a central committee headed by M. H. Lamain, managing director of the Paris Gas Co., organized for the announced purposes of establishing standard grades, propaganda activities for the greater use of benzine as motor fuel, research on the improvement of benzine motor fuels and uniform prices. Related to this is the German Benzol Cartel of Bochum, which controls about 200,000 tons of Germany's 325,000-ton benzol production. Three quarters of Europe's benzol production is consumed in benzol-gasoline mixtures for motor fuel, hence the importance of this organization to American gasoline exporters.

This new European wax combination illustrates the present day tendency to group operations of a noncompetitive type which, as has been pointed out, under American laws are only permitted in export trade but which the pressure of natural development will force to be legalized in the United States with regard to oil and certain other natural resources.

TO CUT PRODUCTION 100,000 BARRELS IN TEXAS

(Continued from Page 29)

tral committee appointed by Mr. Moore, commended the first committee for the work it had accomplished, and said that committees and not mass meetings will be best to handle the situation and study the problems now before the producers. He also advised as to separating the tariff and curtailment problems, and offered a motion for appointing members of a central committee who would work with present proration committees to go into the study of Texas fields and relief of same. This motion was seconded and unanimously adopted.

Joe Danciger, president of the Danciger Oil & Refining Co., moved for a later meeting on the tariff problem, and this meeting was held in the afternoon.

Herndon Speaks

While Mr. Moore and members of the first committee adjourned at this time to select members for the central committee, Edgar J. Marston, president of the Texas Pacific Coal & Oil Co., took the chair.

C. C. Herndon, vice president of the Skelly Oil Co., Tulsa, and president of the Oklahoma-Kansas division of the Mid-Continent Oil & Gas Association, addressed the meeting on Kansas and Oklahoma proration and its success, and pledged his company and these states as ready to do all possible to help the State of Texas in further curtailment to meet the present situation facing producers. He also explained that his division of the Mid-Continent Association did not study the tariff problem, but that another committee headed by Wirt Franklin had taken charge of that problem. Mr. Herndon expressed the thanks of the Kansas and Oklahoma producers to the Texas producers for their co-operation in helping to curtail overproduction. He said they must all co-operate further, along with California, in an economic triangle in an endeavor to bring about a readjustment of crude oil prices. He said, "Cutting prices was the wrong way to curtail overproduction; the right way was to procure co-operation in further curtailment. This could have been achieved without the cut in price."

Mr. Herndon also mentioned that the gasoline taxes of the states are the most drastic in the country, and that they were brought on by the low price of gasoline to the consumer, the State authorities taking advantage of the low prices to affix the higher gasoline taxes.

"Kansas and Oklahoma producers," Mr. Herndon said, "would rather hold their oil in the ground than produce it at the present prices, and they knew that the less they produce the better off they are. Production in the State of Oklahoma has been brought down from around 700,000 bbls. daily to 600,000 bbls. daily since January 16, when the cut in crude prices was posted, and, if notice had been given, this same curtailment in production could have been made. The Oklahoma City Pool was cut to 25 per cent of its potential on the same day the price cut was made, and the East Earlsboro Pool was cut from 60 per cent to 50 per cent, then later cut to 33⅓ per cent of its potential retroactive to January 16."

He also quoted other figures dealing with proration of Oklahoma fields, saying that the present potential of Oklahoma fields was 1,000,000 bbls., and that proration was holding back 400,000 bbls. of this amount per day. Sixty thousand wells in the State producing 240,000 bbls. daily cannot be put under proration because they are averaging only 4 bbls. per well per day.

Harry H. Smith, secretary of the Mid-Continent Oil & Gas Association, Tulsa, relieved much of the tension of the meeting when he told of previous efforts to obtain a tariff on foreign oil. "To the oil producers of the Southwest, the best remedy should be applied quickly to a bad situation. The purpose should be to cut production to where refineries need the oil."

Ray M. Collins, proration umpire of the State of Oklahoma, took the floor for a few minutes quoting facts as to proration plans and success of proration in that State, and offering to answer any question that the Texas producers might have in regard to proration.

Mr. Collett, chairman of the new committee, has had much experience in proration matters, having served as chairman of the Winkler County proration committee when proration was inaugurated in 1927 for that area. Robert R. Penn, vice chairman of the new committee, will take part of the load off of Mr. Collett's shoulders.

Independent Meeting

The Mid-Continent Association was adjourned, and the gathering of the afternoon resolved into a meeting of independent oil producers of Texas. Joe Danciger was elected chairman, but appointed Ed Mayer of Amarillo to take his place while he offered a resolution practically the same as that adopted by the Independent Petroleum Association of America at Tulsa on January 8, and approval was readily signified by the Texas producers. The following resolution was also adopted by the producers, who have formed themselves into the Texas division of the Independent Petroleum Association of America and are formulating plans for affiliating with the Oklahoma association.

"Whereas, the oil-producing industry is today face to face with the most serious crisis in its history as a result of the recent cuts in prices of crude oil in the Mid-Continent area, said new prices being below cost of production, and,

"Whereas, said cuts will not only demoralize the oil-producing industry itself but also the industries necessarily allied with the oil-producing business as well as affecting general business conditions seriously in the State of Texas and the Mid-Continent area, and,

"Whereas, the President of the United States has at his command a committee on stabilization of business created and now operating for the very purpose of ascertaining facts and assisting so far as the Federal Government is concerned in relieving situations such as the identical one now existing in the oil-production industry.

"Now, therefore, be it resolved by this body of independent oil operators, said to be the largest and most representative body of this character assembled at one time, in session at Fort Worth, Tex., this thirty-first day of January, 1930, that Governor Dan Moody be respectfully requested and urged to join with and cooperate with, as closely as possible, the governor of the State of Kansas in his appeal to President Herbert Hoover to call this matter to the attention of the committee of business stabilization at once and urge said committee to make recommendations and do whatever it can toward restoration of a fair market price for production in the Texas and Mid-Continent oil fields, and,

"Be it further resolved, that copies of this resolution be forwarded at once to the governors of the states of Louisiana, Arkansas, Oklahoma and New Mexico, with a request that they join this movement and take the same action as quickly as possible."

Tom Cranfill of Dallas and Luther Turman of Fort Worth were picked by Mr. Danciger to perfect organization of the new body. The local organization of oil men at Wichita Falls, formed last week with 200 members, is asked to affiliate with the association, and all producers of the State of Texas will be asked to come into the Texas division of the association.

TWO MORE PRODUCERS IN VAN POOL; PRODUCTION EXTENDED MILE NORTH

By L. E. Bredberg
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., Feb. 3. — Two more producers added to the Van Pool, Van Zandt County, this week, brings the total number of producers of that area up to six. The sixth well was washed in February 1, flowing 1,548 bbls. the first 19½ hours, and 1,218 bbls. in the 24 hours ending 7 a.m., February 3. This well is Pure Oil Co.'s No. 1 Wells, in the M. Gross Survey, southwest of the discovery. Total depth is 2,678 feet. Pure-Texas Co.'s No. 1-A Tunnell, in center of 6-acre tract, southeast of the discovery well was the fifth well in the Van Pool. Top of the pay sand in this well was found at 2,753-70 feet and the well bottomed at the latter depth, flowing at the rate of 350 bbls. per day through a 1-inch choke. The last production report gave it flowing 442 bbls. through the same choke. This gauge was made in the last 24 hours ending 7 a.m. February 3.

The discovery well made 573 bbls. during the 24 hours ending 7 a.m. this morning. This amount was made through the two three-sixty-fourths-inch chokes with 15 pounds pressure. Pure's No. 1 Thompson made 1,367 bbls. through a half-inch choke, Shell Petroleum Corp.'s No. 1-A Tunnell made 1,456 bbls., and No. 2 Tunnell made 1,389 bbls., both of these wells on half-inch chokes, the first with 380 pounds pressure and the latter with 385 pounds pressure.

Pure Oil Co.'s No. 1 Magers, north of the discovery in the Nacogdoches County School Lands Survey, is now shut down at 2,863 feet with casing cemented. It topped the Woodbine sand at 2,840 feet and started filling with oil, making one head. This oil was much darker in color than oil from the four producing wells, but tested practically the same gravity. This well will probably be completed next week and extend the Van Pool a little over a mile to the north.

Production

Daily average production of the pools of East Central Texas for last week follows:

Boggy Creek	3,350
Cedar Creek	55
Currie	380
Hill County	90
Mexia	4,510
Minerva	570
Nigger Creek	245
Powell	6,384
Richland	265
Thrall	390
Van	4,768
Wortham	950
Total	21,957
Week ending January 25	21,110
Increase	847

SALUTE TO PETROLEUM INDUSTRY IS HEARD ON 36 RADIO STATIONS

NEW YORK, Feb. 4.—The petroleum industry held the center of interest on the air tonight on the occasion of the "Westinghouse Salute to the Oil and Gas Industry" broadcast from 36 radio stations over the coast-to-coast hookup of the National Broadcasting System.

The program was featured by an address by E. B. Reeser, president of the American Petroleum Institute, and an announcer told, in the interludes, of the history of oil and the phenomenal growth of the petroleum industry.

Mr. Reeser's talk follows: "The Westinghouse Salute to the petroleum industry is acknowledged with appreciation.

"The American Petroleum Institute, through the activities of leaders in the various fields of the several oil-producing states, fully realizes the importance of conservation and is making every legal effort to stop unnecessary waste.

"Conservation does not mean the hoarding of its resources for future generations, but rather that the products should be used only for the higher purposes to which they are most readily adapted. We believe that it is economic waste to produce petroleum in such great quantities that it is forced into competition with low-cost coal for consumption under boilers. We believe that the current production of petroleum should be limited from time to time as the demand for high-class consumption may require.

"The petroleum industry has become the giant of the world's basic industries. Its welfare is linked with the convenience, the comfort, the industrial prosperity and, indeed, the safety of our Nation. Millions of stockholders throughout the Nation have invested in the numerous oil companies more than $11,000,000,000. The average net earnings from this tremendous investment is less than 3 per cent per annum.

"Can you comprehend what a billion means? Last year the great American public purchased from local filling stations over 16,000,000,000 gallons of gasoline. Ten years ago the average price was 32 cents a gallon; today it averages less than 20 cents, including the tax. Ten years ago gasoline taxes were unknown. Today you pay a sales tax of approximately 18 to 33 per cent of the retail price of gasoline. Companies are collecting more than $1,000,000 each day as a gasoline tax and turning it over to the several states. We favor a reasonable gasoline tax, but automobile owners have a right to demand that such a tax be reasonable and that all of it be used for road-building and maintenance purposes.

"Taxes imposed by the several producing states as production taxes, plus the usual tax assessed against property, brings the total tax which the consumer must ultimately pay to approximately 25 per cent of the amount you are charged for gasoline. No other essential commodity pays such a tribute.

"The association, for which I speak, is co-operating with the Federal Oil Conservation Board and other state and federal agencies in an effort to conserve our petroleum resources by balancing the production with consumption. Its activities are openly conducted and you are urged to lend your support in this undertaking."

ALBERTA GASOLINE TAX

CHATHAM, Ontario, Feb. 1.—Gasoline used in Alberta in 1929 totaled 50,208,495 imperial gallons, netting the provincal government a revenue of $2,148,418.67. The gasoline tax was 3 cents up to May 31, and thereafter 5 cents a gallon. Consumption and revenue in 1929 both established a new high record.

BUREAU OF MINES STATISTICS FOR DECEMBER

(Continued from Page 32)

pared with 349 refineries, operating at 75 per cent of their capacity in November.

Statistics of Important Fields, December

In general, the output of the flush producing areas declined in December. The daily average output of the Greater Seminole area amounted to 311,000 bbls. as compared with 326,000 bbls. daily in November. This decline was due principally to a continued curtailment of new work as well as to the natural decline of the old wells. Oklahoma City reached a new peak at 74,000 bbls. daily in December, an increase over November of 19,000 bbls. The output of the West Texas area continued to decline as the total new initial production fell to the lowest point in many months. Production at Long Beach fell off again but Santa Fe Springs was slightly higher following the drastic curtailment of the previous month.

Stocks of Seminole were again drawn on and amounted to 17,444,000 bbls. as compared with 17,754,000 bbls. the previous month.

In general, there were fewer oil wells completed in the flush fields in December and the total number of wells drilling on December 31 in the four fields of Seminole, West Texas, Long Beach and Santa Fe Springs amounted to 720 as compared with 760 on November 30.

PRODUCTION AND GRAVITY
(Barrels of 42 U. S. Gallons)

	December, 1929		November, 1929		December, 1928		Average
	Total	Daily av.	Total	Daily av.	Total	Daily av.	gravity
Seminole	9,627,000	311,000	9,790,000	326,000	8,407,000	271,000	39.0
St. Louis, etc.					4,157,000	134,000	40.0
Oklahoma City	2,295,000	74,000	1,644,000	55,000	.....	.....	39.0
West Texas	10,494,000	339,000	10,652,000	355,000	10,799,000	348,000	30.0
Long Beach*	3,254,000	105,000	3,467,000	116,000	5,794,000	187,000	26.0
Santa Fe Springs*	5,193,000	168,000	4,838,000	161,000	3,021,000	97,000	33.0

*From American Petroleum Institute.

STOCKS SEMINOLE-ST. LOUIS, ETC.
(Barrels of 42 U. S. Gallons)

	Dec. 31, 1929	Nov. 30, 1929	Dec. 31, 1928*
Producers' stocks	538,000	537,000	415,000
Tank farm stocks	16,906,000	17,217,000	17,351,000
Total stocks	17,444,000	17,754,000	17,766,000

*Includes stocks at Seminole only.

RECORD OF WELLS DECEMBER, 1929*

	Completions			Total initial production (bbls.)	Average initial production (bbls.)	Drilling Dec. 31
	Oil	Gas	Dry			
Seminole, St. Louis, etc.	57	5	26	55,200	1,000	246
West Texas	60	0	25	76,700	1,300	260
Long Beach	8	0	0	7,300	900	63
Santa Fe Springs	18	0	0	57,500	3,200	151

*From The Oil and Gas Journal.

SUPPLY AND DEMAND OF ALL OILS
(Including wax, coke and asphalt in thousands of barrels of 42 U. S. gallons)

NEW SUPPLY:	Dec., 1929	Nov., 1929	Dec., 1928	Jan.-Dec., 1929	Jan.-Dec., 1928*
Domestic production:					
Crude petroleum	80,339	78,161	79,493	1,005,598	901,474
Daily average	2,592	2,605	2,564	2,755	2,462
Natural gasoline	4,457	4,504	3,929	52,271	42,326
Benzol	238	245	252	3,055	2,809
Total production	85,034	82,910	83,674	1,060,924	946,609
Daily average	2,743	2,764	2,699	2,907	2,586
Imports:					
Crude petroleum	5,887	4,535	6,807	78,915	79,767
Refined products	2,402	3,347	996	29,704	11,790
Total new supply, all oils	93,323	90,792	91,477	1,169,633	1,038,166
Daily average	3,010	3,026	2,951	3,204	2,837
Increase in stocks, all oils	3,595	†3,010	4,622	67,806	22,582
DEMAND:					
Total demand	89,728	93,802	86,855	1,101,827	1,015,584
Daily average	2,894	3,127	2,802	3,019	2,775
Exports‡:					
Crude petroleum	2,089	2,580	1,529	26,374	18,966
Refined products	12,280	10,440	9,439	135,883	135,483
Domestic demand	75,359	80,782	75,887	939,570	861,135
Daily average	2,431	2,693	2,448	2,574	2,353
Excess of daily average domestic production over domestic demand	312	71	251	333	233
STOCKS (end of month):					
Crude petroleum:					
Pipe line, tank farm and refinery:					
East of California*	381,391	380,393	374,874	381,391	374,874
California§	153,135	152,944	115,914	153,135	115,914
Total crude§	534,526	533,337	490,788	534,526	490,788
Natural gasoline at plants	604	514	407	604	407
Refined products	146,939	144,623	128,530	146,939	128,530
Grand total stocks, all oils	682,069	678,474	619,725	682,069	619,725
Days' supply¶	236	217	221	226	223
Bunker oil (included above in domestic demand)	4,100	4,110	4,188	52,308	51,226

*The 1928 figures are final and include producers' stocks except for California. †Decrease. ‡Includes shipments to Alaska, Hawaii and Porto Rico. §Includes fuel oil in California. ¶Grand total stocks all oils divided by daily average total demand.

IMPORTS AND EXPORTS OF CRUDE PETROLEUM (Barrels)
(From Bureau of Foreign and Domestic Commerce)

	December, 1929		November, 1929		Jan.-Dec.,	Jan.-Dec.,
	Total	Daily av.	Total	Daily av.	1929	1928
Imports	5,887,000	189,900	4,535,000	151,200	78,915,000	79,767,000
From Mexico	712,000	23,000	708,000	23,600	12,663,000	17,584,000
From Venezuela	3,236,000	104,400	3,132,000	104,400	50,637,000	46,977,000
From Colombia	1,696,000	54,700	420,000	14,000	12,620,000	11,838,000
From other countries	243,000	7,800	275,000	9,200	2,995,000	3,368,000
Exports	2,089,000	67,400	2,580,000	86,000	26,374,000	18,966,000
Domestic crude oil:						
To Canada	1,657,000	53,500	2,223,000	74,100	22,250,000	15,431,000
To other countries	432,000	13,900	357,000	11,900	4,117,000	3,530,000
Shipments	.....	.....	.....	.....	7,000	4,000
Foreign crude oil	.....	.....	.....	.....	.....	1,000

SHIPMENTS OF CALIFORNIA OIL THROUGH PANAMA CANAL TO EASTERN PORTS IN UNITED STATES (Barrels)

	Dec., 1929	Nov., 1929	Dec., 1928	Jan.-Dec., 1929	Jan.-Dec., 1928
Crude oil	.....	.....	.....	1,299,000	2,301,000
Refined products	2,773,000	2,518,000	2,144,000	27,965,000	20,835,000
Gasoline	1,976,000	2,131,000	1,887,000	23,483,000	16,779,000
Tops	.....	.....	.....	.....	339,000
Kerosene	53,000	50,000	.....	229,000	1,000
Gas oil	656,000	332,000	250,000	3,864,000	2,324,000
Fuel oil	75,000	3,000	3,000	179,000	1,028,000
Lubricants	11,000	.....	2,000	182,000	335,000
Asphalt	2,000	2,000	2,000	28,000	29,000

INDICATED DELIVERIES OF CRUDE PETROLEUM, EXCLUSIVE OF CALIFORNIA GRADES, TO DOMESTIC CONSUMERS (Barrels)

Domestic petroleum by fields of origin:	December, 1929		November, 1929		Jan.-Dec.,	Jan.-Dec.,
	Total	Daily av.	Total	Daily av.	1929	1928
Appalachian	2,932,000	94,600	3,151,000	105,000	34,023,000	32,908,000
Lima-Indiana	43,000	1,400	108,000	3,600	2,167,000	1,649,000
Michigan	372,000	12,000	393,000	13,100	4,354,000	595,000
Illinois and S. W. Ind.	527,000	17,000	576,000	19,200	8,172,000	8,232,000
Mid-Continent	47,837,000	1,543,000	48,406,000	1,613,500	576,427,000	534,951,000
Gulf Coast	5,612,00	181,000	5,448,000	181,600	53,717,000	46,331,000
Rocky Mountain	2,255,000	72,800	2,257,000	75,300	27,182,000	31,084,000
Deliveries and exports	59,578,000	1,921,900	60,339,000	2,011,300	706,042,000	655,750,000
Deliveries	58,202,000	1,877,500	58,483,000	1,949,400	687,529,000	642,466,000
Foreign petroleum	5,905,000	190,500	4,520,000	150,700	79,062,000	79,591,000
Deliveries of domestic and foreign petroleum	64,107,000	2,068,000	63,003,000	2,100,100	766,591,000	722,057,000

PRODUCTION OF CRUDE PETROLEUM BY FIELDS AND STATES WITH CLASSIFICATION BY GRAVITY
(Barrels of 42 U. S. Gallons)

FIELD:	December, 1929		November, 1929		Jan.-Dec.,	Jan.-Dec.,
	Total	Daily av.	Total	Daily av.	1929	1928
Appalachian	3,018,000	97,400	2,937,000	97,900	33,757,000	31,059,000
Lima-Indiana	110,000	3,500	115,000	3,900	1,549,000	1,670,000
Michigan	372,000	12,000	393,000	13,100	4,354,000	594,000
Illinois-Southwest Ind.	567,000	18,300	584,000	19,500	7,216,000	7,425,000
Mid-Continent	47,024,000	1,516,900	45,382,000	1,512,700	584,751,000	553,125,000
Gulf Coast	5,281,000	170,300	5,224,000	174,100	55,574,000	46,591,000
Rocky Mountain	2,262,000	73,000	2,208,000	73,600	26,360,000	*29,193,000
California	21,765,000	700,200	21,318,000	710,600	292,037,000	231,811,000
United States total	80,339,000	2,591,600	78,161,000	2,605,400	1,005,598,000	901,474,000
STATE:						
Arkansas	1,875,000	60,500	1,806,000	60,200	25,076,000	32,096,000
California	21,765,000	700,200	21,318,000	710,600	292,037,000	231,811,000
Colorado	166,000	5,400	151,000	5,000	2,298,000	2,774,000
Illinois	490,000	15,800	506,000	16,900	6,304,000	6,462,000
Indiana	82,000	2,600	83,000	2,800	977,000	1,052,000
Southwestern	77,000	2,500	78,000	2,600	912,000	363,000
Northeastern	5,000	100	5,000	200	65,000	89,000
Kansas	3,477,000	112,100	3,433,000	114,400	42,875,000	38,596,000
Kentucky	711,000	23,000	725,000	24,200	7,776,000	7,359,000
Louisiana	1,774,000	57,200	1,656,000	55,200	20,229,000	21,847,000
Gulf Coast	602,000	19,400	592,000	19,700	7,235,000	7,053,000
Rest of State	1,172,000	37,800	1,064,000	35,500	12,994,000	14,794,000
Michigan	372,000	12,000	393,000	13,100	4,354,000	594,000
Montana	237,000	7,600	243,000	8,100	3,183,000	4,015,000
New Mexico	248,000	8,000	238,000	7,900	1,689,000	943,000
New York	298,000	9,600	281,000	9,400	3,346,000	2,603,000
Ohio	542,000	17,500	532,000	17,700	6,708,000	7,015,000
Central and eastern	437,000	14,100	422,000	14,000	5,224,000	5,434,000
Northwestern	105,000	3,400	110,000	3,700	1,484,000	1,581,000
Oklahoma	20,125,000	649,200	19,120,000	637,300	253,704,000	249,857,000
Osage County	.....	.....	1,137,000	37,900	.....	19,667,000
Rest of State	.....	.....	17,983,000	599,400	.....	230,190,000
Pennsylvania	1,110,000	35,800	1,053,000	35,100	11,805,000	9,956,000
Tennessee	.....	.....	1,000	.....	19,000	46,000
Texas	25,054,000	808,200	24,591,000	819,700	298,441,000	257,320,000
Gulf Coast	4,679,000	150,900	4,632,000	154,400	48,339,000	39,538,000
Rest of state	20,375,000	657,300	19,959,000	665,300	250,102,000	217,782,000
West Virginia	462,000	14,900	455,000	15,200	5,587,000	5,661,000
Wyoming	1,611,000	52,000	1,576,000	52,600	19,190,000	21,461,000
Salt Creek	944,000	30,500	930,000	31,000	11,360,000	14,023,000
Rest of State	667,000	21,500	646,000	21,600	7,830,000	7,438,000
CLASSIFICATION BY GRAVITY (approx.):						
Light crude	71,264,000	2,298,900	69,409,000	2,313,700	904,111,000	805,534,000
Heavy crude	9,075,000	292,700	8,752,000	291,700	101,487,000	95,940,000

*Includes 6,000 bbls. for Alaska and Utah.

STOCKS OF CRUDE PETROLEUM HELD IN THE UNITED STATES (Barrels)

AT REFINERIES (and in coastwise transit thereto). Reported by location of storage:	Dec. 31, 1929	Nov. 30, 1929	Dec. 31, 1928
East Coast: Domestic	8,955,000	8,695,000	8,496,000
Foreign	3,989,000	3,208,000	4,306,000
Appalachian	2,953,000	2,952,000	2,183,000
Indiana, Illinois, Kentucky, etc.	3,305,000	3,199,000	2,939,000
Oklahoma, Kansas and Missouri	5,610,000	5,372,000	5,530,000
Texas: Inland	2,034,000	1,702,000	2,184,000
Gulf Coast: Domestic	10,749,000	10,519,000	7,206,000
Foreign	485,000	585,000	207,000
Arkansas and inland Louisiana	1,050,000	1,046,000	758,000
Louisiana Gulf Coast: Domestic	3,930,000	3,910,000	3,315,000
Foreign	1,499,000	1,535,000	1,359,000
Rocky Mountain	1,636,000	1,512,000	2,046,000
Total east of California	46,195,000	44,235,000	40,529,000
ELSEWHERE THAN AT REFINERIES:			
Domestic—Reported by field of origin:			
Appalachian:			
New York, Pennsylvania, West Virginia, eastern and central Ohio—Gross	4,975,000	4,787,000	5,036,000
Net	4,675,000	4,473,000	4,751,000
Kentucky—Gross	708,000	828,000	913,000
Net	574,000	690,000	764,000
Lima-Indiana—Gross	731,000	663,000	1,344,000
Net	544,000	477,000	1,162,000
Illinois-Southwest Indiana—Gross	11,113,000	11,073,000	12,035,000
Net	10,411,000	10,371,000	11,367,000
Mid-Continent:			
Oklahoma; Kansas; Panhandle, Central, North and West Texas—Gross	265,371,000	266,157,000	251,849,000
Net	252,504,000	253,425,000	239,345,000
Northern Louisiana and Arkansas—Gross	25,207,000	25,062,000	29,131,000
Net	21,568,000	21,460,000	26,403,000
Gulf Coast—Gross	20,547,000	20,879,000	18,826,000
Net	20,129,000	20,460,000	18,272,000
Rocky Mountain—Gross	24,740,000	24,729,000	25,522,000
Net	24,679,000	24,672,000	25,501,000
Total pipe line and tank farm stocks east of California—Gross	353,392,000	354,178,000	344,656,000
Net	335,984,000	336,028,000	327,565,000
Foreign crude petroleum on Atlantic Coast	80,000	105,000	49,000
Foreign crude petroleum on Gulf Coast	32,000	25,000	210,000
Total refinery, pipe line and tank farm stocks of domestic and foreign crude petroleum east of California	381,391,000	380,393,000	368,353,000
CLASSIFICATION BY GRAVITY (approx.):			
East of California:			
Light crude ((24 degrees and above)	342,049,000	341,446,000	319,928,000
Heavy crude (below 24 degrees)	39,342,000	38,947,000	48,425,000
California: Light (20 degrees and above)	40,429,000	41,571,000	16,995,000
Heavy (including fuel)	111,660,000	110,718,000	98,919,000
PRODUCERS' STOCKS (not included above; approx.):			
East of California	6,050,000	6,150,000	6,521,000
California	1,046,000	655,000	*

*Not available.

(Table Continued on Next Page)

NUMBER OF WELLS COMPLETED*

	Dec., 1929	Nov., 1929	Dec., 1928	Jan. Dec., 1929	Jan.-Dec., 1928
Oil	1,060	1,404	1,070	15,515	12,526
Gas	306	303	229	2,893	2,727
Dry	608	742	605	7,900	7,078
Total	1,974	2,449	1,904	26,308	22,331

*From The Oil and Gas Journal and California office of the American Petroleum Institute.

COMPARATIVE ANALYSES
(Thousands of barrels of 42 U. S. gallons)

	Runs to stills Total	Runs to stills Dly. av.	Imports* Total	Imports* Dly. av.	Exports* Total	Exports* Dly. av.	Stocks end period	Dom. demand Total	Dom. demand Dly. av.
Crude petroleum:									
Dec., 1929	80,663	2,602	5,887	190	2,089	67	†421,820	....	....
Nov., 1929	81,061	2,702	4,535	151	2,580	86	†421,964	....	....
Jan.-Dec., 1929	987,708	2,706	78,915	216	26,374	72	†421,820	....	....
Dec., 1928	79,520	2,565	6,807	220	1,529	49	†385,348	....	....
Jan.-Dec., 1928	913,295	2,495	79,767	218	18,966	52	†385,348	....	....
	Production Total	Production Dly. av.							
Gasoline:									
Dec., 1929	37,133	1,198	716	23	5,964	192	43,115	26,550	856
Nov., 1929	37,350	1,245	984	33	4,094	136	37,780	31,502	1,050
Jan.-Dec., 1929	434,241	1,190	3,868	24	61,208	168	43,115	371,852	1,019
Dec., 1928	33,934	1,095	320	10	3,797	122	33,066	26,576	857
Jan.-Dec., 1928	376,945	1,030	4,198	11	52,904	145	33,066	328,489	898
Kerosene:									
Dec., 1929	4,848	156	20	1	1,682	54	9,039	3,513	113
Nov., 1929	4,829	161	34	1	1,319	44	9,366	3,043	101
Jan.-Dec., 1929	57,154	157	208	1	20,018	55	9,039	37,306	102
Dec., 1928	4,768	154	20	1	1,236	40	9,001	3,437	111
Jan.-Dec., 1928	59,353	162	202	1	22,034	60	9,001	36,235	99
Gas oil and fuel oil:									
Dec., 1929	36,261	1,170	1,650	53	3,394	109	‡146,085	....	....
Nov., 1929	36,134	1,205	2,297	77	4,098	137	‡148,117	....	....
Jan.-Dec., 1929	447,894	1,227	20,510	56	39,073	107	‡146,085	....	....
Dec., 1928	37,493	1,209	646	21	3,268	105	‡133,845	....	....
Jan.-Dec., 1928	427,237	1,167	7,268	20	44,427	121	‡133,845	....	....
Lubricants:									
Dec., 1929	2,765	89	2	...	899	29	8,269	1,716	55
Nov., 1929	2,555	85	3	...	604	20	8,117	1,858	62
Jan.-Dec., 1929	34,359	94	39	...	10,965	30	8,269	23,504	64
Dec., 1928	2,993	97	2	...	846	27	8,340	1,730	56
Jan.-Dec., 1928	34,658	95	13	...	11,023	30	8,340	23,168	63
Wax (thousands of lbs.):									
Dec., 1929	49,104	1,584	3,860	125	26,354	850	187,990	24,179	780
Nov., 1929	50,775	1,693	2,609	87	26,685	890	185,559	30,234	1,008
Jan.-Dec., 1929	630,074	1,726	40,522	111	318,488	873	187,990	274,462	752
Dec., 1928	54,685	1,764	2,139	69	26,610	858	110,344	23,819	768
Jan.-Dec., 1928	630,144	1,722	24,741	68	392,705	1,073	110,344	302,474	826

*From Bureau of Foreign and Domestic Commerce, subject to revision. Exports include shipments to Alaska, Hawaii and Porto Rico. †Includes California light crude. ‡Includes California heavy crude and fuel oil.

RUNS TO STILLS AND OUTPUT OF REFINERIES IN THE UNITED STATES, DECEMBER, 1929

Input—	Crude oil Domestic	Crude oil Foreign	Unfinished oil rerun	Natural gasoline	Total input (bbls.)
East Coast	9,746,000	4,511,000	1,333,000	319,000	15,909,000
Appalachian	2,585,000	.....	266,000	70,000	2,921,000
Ind., Ill., Ky., etc.	9,210,000	.....	905,000	289,000	10,404,000
Okla., Kans., Mo.	9,558,000	.....	382,000	410,000	10,350,000
Texas	17,229,000	299,000	773,000	829,000	19,130,000
Louisiana and Arkansas	5,586,000	373,000	270,000	553,000	6,782,000
Rocky Mountain	1,863,000	.....	532,000	123,000	2,518,000
California	19,703,000	.....	*234,000	†1,400,000	21,337,000
Total United States	75,480,000	5,183,000	4,695,000	3,993,000	89,351,000
Daily average 12/29	2,434,800	167,200	151,500	128,800	2,882,300
Daily average 11/29	2,512,100	189,900	163,700	130,700	2,996,400
Texas Gulf Coast	12,836,000	299,000	486,000	597,000	14,218,000
Louisiana Gulf Coast	3,748,000	373,000	50,000	440,000	4,611,000

Output—	Gasoline (bbls.)	Kerosene (bbls.)	Gas oil and fuel oil (bbls.)	Lubricants (bbls.)	Wax (lbs.)
East Coast	5,479,000	635,000	7,580,000	958,000	21,795,000
Appalachian	1,294,000	323,000	594,000	391,000	7,549,000
Ind., Ill., Ky., etc.	5,573,000	388,000	3,115,000	337,000	3,751,000
Okla., Kans., Mo.	5,227,000	689,000	3,282,000	211,000	2,936,000
Texas	7,991,000	1,394,000	7,401,000	528,000	5,019,000
Louisiana and Arkansas	2,809,000	596,000	2,331,000	74,000	6,127,000
Rocky Mountain	1,250,000	91,000	557,000	31,000	1,927,000
California	7,510,000	732,000	11,401,000	236,000	.....
Total United States	37,133,000	4,848,000	36,261,000	2,765,000	‡49,104,000
Daily average 12/29	1,197,800	156,400	1,169,700	89,200	1,584,000
Daily average 11/29	1,245,000	161,000	1,204,500	85,200	1,692,500
Texas Gulf Coast	6,020,000	1,167,000	5,107,000	499,000	4,621,000
Louisiana Gulf Coast	2,125,000	527,000	1,270,000	68,000	6,127,000

Output—	Coke (tons)	Asphalt (tons)	Other finished products (bbls.)	Unfinished products (bbls.)	Shortage (bbls.)
East Coast	17,000	55,500	51,000	184,000	560,000
Appalachian	5,100	1,100	17,000	77,000	166,000
Ind., Ill., Ky., etc.	40,800	53,300	180,000	184,000	121,000
Okla., Kans., Mo.	29,900	2,600	85,000	266,000	407,000
Texas	42,600	14,200	28,000	624,000	856,000
Louisiana and Arkansas	14,800	13,100	211,000	400,000	196,000
Rocky Mountain	9,700	.....	17,000	453,000	51,000
California	11,000	48,100	110,000	*548,000	464,000
Total United States	‡170,900	‡187,900	699,000	2,736,000	2,821,000
Daily average 12/29	5,500	6,100	22,500	88,300	91,000
Daily average 11/29	5,200	8,300	23,100	103,800	95,700
Texas Gulf Coast	36,700	14,200	19,000	488,000	641,000
Louisiana Gulf Coast	14,600	11,400	206,000	177,000	83,000

*Includes 176,000 bbls. net tops rerun. †Includes 126,000 bbls. run through pipe lines. ‡Wax, coke and asphalt equivalent to 279 pounds per barrel and 5.12 and 5.52 bbls. per ton, respectively.

GASOLINE PRODUCTION BY THE VARIOUS METHODS, DECEMBER, 1929

	Straightrun (bbls.)	%	Cracked (bbls.)	%	Natural gasoline (bbls.)	%	Total (bbls.)
East Coast	2,458,000	45	2,702,000	49	319,000	6	5,479,000
Appalachian	760,000	59	464,000	36	70,000	5	1,294,000
Ind., Ill., Ky., etc.	2,927,000	53	2,357,000	42	289,000	5	5,573,000
Okla., Kans., Mo.	2,973,000	57	1,844,000	35	410,000	8	5,227,000
Texas	3,583,000	45	3,579,000	45	829,000	10	7,991,000
Louisiana and Arkansas	1,344,000	48	912,000	32	553,000	20	2,809,000
Rocky Mountain	620,000	50	507,000	40	123,000	10	1,250,000
California	4,844,000	64	1,266,000	17	*1,400,000	19	7,510,000
Total	19,509,000	52	13,631,000	37	3,993,000	11	37,133,000
Total Nov., 1929	20,266,000	54	13,163,000	35	3,921,000	11	37,350,000
Total Jan.-Dec., 1929	245,019,000	56	143,759,000	33	45,463,000	11	434,241,000
Total Jan.-Dec., 1928	219,168,000	58	122,554,000	33	35,223,000	9	376,945,000
Gulf Coast	3,430,000	42	3,678,000	45	1,037,000	13	8,145,000

*Includes 126,000 bbls. run through pipe lines.

STOCKS HELD BY REFINING COMPANIES IN THE UNITED STATES, DECEMBER 31, 1929

	Gasoline (bbls.)	Kerosene (bbls.)	Gas oil and fuel oil (bbls.)	Lubricants (bbls.)
East Coast	6,063,000	1,340,000	6,940,000	2,757,000
Appalachian	1,383,000	293,000	1,003,000	1,175,000
Ind., Ill., Ky., etc.	5,634,000	943,000	3,490,000	854,000
Okla., Kans., Mo.	4,123,000	1,002,000	4,033,000	514,000
Texas	6,648,000	1,582,000	14,868,000	1,732,000
Louisiana and Arkansas	2,145,000	749,000	2,771,000	116,000
Rocky Mountain	2,334,000	289,000	1,320,000	169,000
California	14,785,000	2,841,000	.....	952,000
Total	43,115,000	9,039,000	*34,425,000	8,269,000
Total 11/30/29	37,780,000	9,366,000	*37,399,000	8,117,000
Texas Gulf Coast	5,313,000	1,425,000	10,943,000	1,686,000
Louisiana Gulf Coast	1,838,000	694,000	1,892,000	110,000

	Wax (lbs.)	Coke (tons)	Asphalt (tons)	Other finished products (bbls.)	Unfinished oils (bbls.)
East Coast	83,501,000	22,800	89,700	88,000	8,306,000
Appalachian	19,348,000	5,900	3,600	56,000	1,507,000
Ind., Ill., Ky., etc.	18,203,000	41,400	65,300	285,000	4,496,000
Okla., Kans., Mo.	4,894,000	88,900	3,400	48,000	2,485,000
Texas	4,871,000	301,800	10,700	22,000	13,063,000
Louisiana and Arkansas	37,457,000	61,100	25,200	161,000	4,724,000
Rocky Mountain	19,716,000	110,000	5,400	94,000	1,512,000
California	.....	60,600	37,000	402,000	†9,296,000
Total	187,990,000	692,500	240,300	1,156,000	45,389,000
Total 11/30/29	185,559,000	687,800	234,000	835,000	45,623,000
Texas Gulf Coast	4,824,000	289,900	10,700	13,000	11,579,000
Louisiana Gulf Coast	37,457,000	61,100	20,900	157,000	4,152,000

*East of California. †Includes 2,841,000 bbls. tops.

Late Fields

(Continued from Page 40)

The Texas Company's No. 1 State-Bay Junop, Bay Junop Dome of southern Terrebonne Parish, drilled into cap rock to a total depth of 5,099 feet, thus proving dome material and checking the results of the geophysical discovery. This well was plugged back to 2,600 feet where it tested dry and was abandoned. There was a sand showing oil at 4,778-89 feet but this tested salt water. The Texas Company's discovery well at Caillou Island, another of the seven Terrebonne Parish domes, completed 10 days ago flowing 46 bbls. an hour from a sand at 4,234 feet, has stopped flowing and is being worked over.

Other completions included another shallow sand producer, Gulf Refining Co.'s No. 19 Lutcher-Moore, on top of the dome at Starks, Calcasieu Parish; Gulf Production Co.'s No. 31 Taylor, southwest side of Pierce Junction, flowing 900 bbls., 4,475 feet; Humble Oil & Refining Co.'s No. 5 Payne, Raccoon Bend, Austin County, 400 bbls., 3,392 feet; this company's No. 8 Nelson, DeWalt, Fort Bend County, 75 bbls., 3,802 feet; Yount Lee Oil Co.'s No. 55 McFaddin, Spindletop, a workover, 1,200 bbls., 3,549 feet; the same company's No. 122 McFaddin, Spindletop, dry gas, 4,753 feet, and Russell Ferrell's No. 4 Gillette, Goose Creek, a workover, pumping 200 bbls. fluid, 9 per cent sediment and water, 1,462 feet.

Yount Lee Oil Co.'s No. 5 Crowley on the northeast side of the Jennings Field, another attempt to find deep production there, failed when it went into cap rock at 4,535 feet and was abandoned. Pure Oil Co.'s No. 6-A Mayes, also found cap rock and was abandoned at 3,290 feet.

OKLAHOMA

The new wildcat wells south of the old Earlsboro Pool are shut down. Magnolia Petroleum Co.'s No. 1 Ground, in Section 23-9-5, swabbed 460 bbls. in eight hours Saturday, February 1, and 594 bbls. in 15 hours Sunday, February 2. The well was shut down preparing to pump. The company has agreed to produce only 100 bbls. a day from the new well for 75 days. This agreement was made with the offset lease owners.

Amerada Petroleum Corp. and Dixie Oil Co.'s No. 1 Ground, in Section 22-9-5, is shut down to erect stock tanks. No estimate was made of production.

Sinclair Oil & Gas Co.'s No. 1 Stewart, NW cor. SW SW Section 33-27-16w, Wood County wildcat, was making 15,000,000 feet of gas and spraying water from a total depth of 6,745 feet in shale. It is the fourth showing of gas the test has encountered while drilling. The same company's No. 1 Howell, C SW SW Section 14-26-24w, Harper County, was drilling at 6,990 feet on February 4 with nothing showing. It is the deepest drilling test in northwestern Oklahoma.

Gypsy Oil Co.'s No. 1 Bilderbeck, in Section 27-28-7w, Grant County wildcat, had 4,000 feet of water in the hole from the Wilcox sand at 5,647-49 feet. The test is shut down.

McCulloch Oil Co.'s No. 1 Enlitka, NW cor. NE SW Section 16-6-6, in the Konawa Pool in Seminole County has extended production in the pool three-quarters of a mile southeast. The well drilled the cement plugs and made 610 bbls. the first 24 hours from the pay horizon at 2,922-32 feet. It was shut down for a pipe line connection.

The production of the East Little River Pool on February 4 was 20,393 bbls. from 54 wells.

The East Earlsboro Pool made 69,900 bbls. from 121 completed wells on the gauge of February 4.

Gypsy Oil Co.'s No. 1 Factor in Section 19-7-7, Seminole County, west of the production in East Little River Pool, was shut in for 10,000,000 feet of gas at a total depth of 3,123 feet.

The production at the Oklahoma City Pool on the gauge of February 4, was 75,988 bbls. from 16 wells.

Indian Territory Illuminating Oil Co.'s No. 10 Trosper, SE cor. SW SW, Section 13-11-3, was added to the production column Monday, February 3. The well made 1,633 bbls. in two and one-half hours from the Simpson sand at 6,385-6,416 feet, and made approximately 60,000,000 feet of gas.

Sinclair Oil & Gas Co.'s No. 2 Kinter, SW cor. SE, Section 30-11-2w, was drilled deeper to a total depth of 6,457 feet. The well made 3,555 bbls. and considerable gas from the Simpson sand at 6,305-83 feet.

Tom Slick Oil Co.'s No. 1 Banta, SE cor. SW SE, Section 18-11-2w, on the east side of the Oklahoma City Field, has 3,500 feet of fluid in the hole from the Arbuckle lime at 6,670-6,740 feet. The test was drilling deeper on February 4, at 6,780 feet.

DIRECTORS OF THE I.O.M.A.

CHICAGO, Feb. 1.—At the last meeting of the trustees of the Independent Oil Men of America, a number of vacancies on the board of directors were filled in accordance with the action taken at the last general meeting. Following are the names of those who were chosen, all of whom have accepted. R. M. Pritchard, Home Oil Co., Ripley, Tenn.; S. H. Arnold, Elk Oil Co., Fayetteville, Tenn.; E. E. Johnson, Columbia Oil Co., Columbia, Tenn.; B. G. Shepard, Inter-State Oil Co., Kansas City, Kans.; Floyd Casey, Master Petroleum Co., Waco, Tex.; and R. J. Brown, Brown Petroleum Co., St. Louis, Mo.

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Of Interest to Sales Departments

Germany Gaining as Large Consumer of Petroleum Products

By Charles E. Kern
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., Feb. 1.—Progressively increasing mineral oil imports by Germany were 11 per cent more in the first nine months of 1929 than in the corresponding period of 1928, according to reports just received here. The mineral oil imports by Germany make a sum of 2,013,847 metric tons in the nine classes of products against 1,789,900 tons a year ago.

Additional imports of 121,992 tons of benzol against 119,719 tons a year ago swelled the total of these imports by Germany. Of the benzol imported by Germany 41,756 tons originated in the United States, this for the first nine months of the calendar year 1929.

Out of the total of 2,013,847 tons of product sold Germany in the current period just past, the United States shared with 932,435 tons or 46 per cent, a slight gain in the third quarter of this year. Venezuela follows with 368,876 tons or 18 per cent of the total, and Russia with 232,933 tons or 11.5 per cent. A sum of tonnages of light, heavy and crude gasolines amounts to 856,000 tons while the import of 122,000 tons of benzol accounts for a sum of 978,000 tons fuel for internal combustion engines.

With Germany's probable internal production during the nine-month period of 250,000 tons benzol, and something over 50,000 tons synthetic, lignite-tar and local crude oil yield, it may be calculated that consumption by expanding motorization in Germany has gone up to at least 1,278,000 tons in the three quarters of 1929, an annual consumption rate of over 1,700,000 tons. The German Dye Trust is producing 300 tons of gasoline daily which is an increase over 100 tons daily last year.

Tank Stations

With the current consumption of light liquid fuels for internal combustion engines of over 1,500,000 metric tons annually, against 1,125,000 tons in 1928, Germany has developed a widespread network of servicing in the past few years. It is estimated, for instance, that there are 40,000 tank stations here now, against 70,000 in England, 50,000 in France, and an average of from 4,000 to 5,000 in Holland, Switzerland and Denmark. With 933,312 motor vehicles in Germany according to the latest census, Germany has one tank station per 23.3 motor vehicles, against a maximum tank station density in Denmark (18.4) and a minimum density in England (27.6).

Trading in light fuels is predominantly in the hands of the giant world concerns, such as American Standard Oil, British Royal Dutch, British Anglo-Persian and Russian Derop. These concerns unload at German ports, and transport chiefly by inland waterway to interior storage tanks, saving the higher rail freight rate. The latter distributes then to smaller consumers, direct or through tank stations. While they formerly used barrels and cans for further distribution chiefly, they employ motor tank trucks largely now.

The large supplying organizations are relatively few, and include the Standard Oil, British Royal Dutch-Shell, Anglo-Persian Oil Co., Atlantic Refining Co., Standard Royal Dutch and Russian Soviet.

Essentially German concerns interested in the oil industry are few and owe whatever dominance they may have to their control of benzol and alcohol for antiknock mixtures.

AUTOMOBILE DATA ASSURE LARGE GASOLINE CONSUMPTION IN 1930

A large consumption of gasoline and motor fuels is assured for 1930 based on data compiled by the National Automobile Chamber of Commerce. The report as summarized by the Western Petroleum Association is given in the accompanying table.

According to the report the year started with 26,400,000 registered motor vehicles of which 3,370,000 were trucks. The world registration of cars and trucks is estimated at 34,700,000.

The report estimates that the total motor vehicle production in 1929 in the United States and Canada was 5,651,000. This was a record output and represented an increase of 22.8 per cent over the previous year.

The trend toward closed car production continued although the percentage in 1929 was not quite as large as in 1928. It is estimated that the closed car production totaled 4,218,000 in 1929.

To take care of the demands of these motor vehicles it is estimated there were 320,000 gasoline filling stations at the close of 1929. This was an increase of .9 per cent over the previous year. Gasoline was available from 610,000 pumps at the close of the year.

The following table was prepared by the National Automobile Chamber of Commerce:

	1928	1929	Percentage increase
Closed cars produced in U. S. and Canada	3,564,462	4,218,000	18.3
Open cars produced in U. S. and Canada	460,128	628,000	36.5
Total cars produced in U. S. and Canada	4,024,590	4,846,000	20.4
Per cent closed cars	89%	87%	
Trucks produced in U. S. and Canada	576,540	805,000	39.6
Total cars and trucks produced in U. S. and Canada	4,601,130	5,651,000	22.8
U. S. exports and Canadian output	825,112	1,015,000	23.0
U. S. imports	566	710	25.4
Indicated U. S. replacement of cars and trucks	2,416,700	2,729,834	13.0
Indicated U. S. new domestic market for cars and trucks	1,359,883	1,906,876	40.2
Indicated U. S. domestic market for cars and trucks	3,776,583	4,636,710	22.8
Increase in U. S. registration of cars and trucks	1,359,883	1,906,876	
U. S. registration of cars, December 31	21,379,125	23,030,000	7.7
U. S. registration of trucks, December 31	3,113,999	3,370,000	8.2
U. S. registration of cars and trucks, December 31	24,493,124	26,400,000	7.8
World registration of cars and trucks, December 31	31,778,203	34,700,000	9.2
Per cent of world's cars and trucks in U. S.	77%	76%	
Cars and trucks on U. S. farms	5,426,900	5,800,000	6.9
Miles of surfaced highways in U. S.	625,000	660,000	5.6
Miles of total highways in U. S.	3,013,584	3,016,281	0.1
Gasoline taxes	$304,871,766	$415,000,000	36.1
Gasoline consumption by motor vehicles (bbls.)	263,066,000	297,000,000	12.9
Per cent of total gasoline consumption	80%	80%	
Gasoline filling stations	317,000	320,000	0.9
Gasoline pumps in use	604,000	610,000	1.0
Motor trucks in use	3,120,000	3,370,000	8.0
Motor buses in use	92,325	95,000	2.9
Buses used by consolidated schools	40,875	43,000	5.2
Buses used by street railways	10,062	11,500	14.3
Buses used by steam railways	1,256	1,900	51.3

REFUSE PATENT BASED ON COLOR OF GASOLINE

William A. Kinnan, first assistant Commissioner of Patents, at Washington, D. C., has ruled against the General Petroleum Corp., California, in an appeal for registering a trademark for its gasoline based on its color.

The company endeavored to register the violet color of its gasoline as a trademark because of the peculiar nature of the product which permits of no other form of identification. This registration was denied by the Patent Office on the ground that the public would be unable to recognize color as a trademark, owing to the fact that many gasolines now marketed are colored for other reasons, among them being the addition of elements to improve quality. It was pointed out that "Esso" gasoline is red, "Tydol" gasoline is green, and "Sunoco" gasoline is blue, but that other companies use these and other colors in their gasolines, and these colors are not considered trademarks, their exclusive use not being appropriated by any one company.

In his ruling, Commissioner Kinnan stated that colors are used in gasoline to make the product more attractive to the consumer, as they are used in many other products. Color is so widely used in commerce, he declared, that the public does not regard it as a trademark, save where it is associated with some particular design or pattern.

Ruling on the General Petroleum appeal, he said that the numerous precedents against the appropriation of the exclusive use of a color alone as a trademark must apply in this case, there being no reason why gasoline should be placed in a different category than other commodities.

LAVISH ENTERTAINMENT AT MEETINGS CONDEMNED

NEW YORK, Feb. 1.—"Lavish, unwarranted and wholesale entertainment" at conventions is condemned by the American Oil Burner Association, in a bulletin issued today, as inimical to the best interests of the industry. Exhibitors and others attending the seventh annual convention and the National Oil Burner Show, to be held by the association in Chicago during the week of April 7, are asked to co-operate in the "abatement of such practices." This action, according to the bulletin, was taken by the directors of the association through a resolution adopted at their quarterly meeting held at Chicago, January 14.

"Such practices," says the statement, "detract from, and tend to defeat the purpose of, such conventions, reflect discredit on the men of the industry and discourage companies from sending their representatives to conventions. They result in excessive, unnecessary and unwarranted expense contrary to good business ethics and practices." The action of the directors, the bulletin says, is in conformity with the stand taken recently by certain other organizations.

AIRPLANES STILL MINOR FACTOR IN TOTAL DEMAND

That airplanes are still a minor factor in the consumption of lubricating oils and gasoline is indicated in the official report of the Aeronautical Chamber of Commerce, Inc., which shows that the total production of planes in 1929 was 6,034. This compares with a total motor vehicle production of 5,358,361 in 1929. The production of airplanes for 1929 was less than the daily average car production of the Ford Motor Co.

Regarding the position of the aircraft industry for 1930, Frederick B. Rentschler, president of the Chamber of Commerce said: "Leaders in the aircraft industry realized that a condition of overexpansion and overproduction was certain to result if the production pace set during the first six months of 1929 was continued, and many of the most soundly managed units in the industry prepared for a major readjustment by cutting down their production schedules long before the general financial crisis was experienced in Wall Street," Mr. Rentschler said today.

"While the reports of 96 major aircraft manufacturers show 6,034 airplanes produced during 1929, the six months' figures of 71 manufacturers totaled 3,381 planes. This production decline during the second six months indicates the wise policy established by many of the companies, which cut their schedules to meet the actual demands of the domestic market, and sought new fields for the distribution of their products abroad. The same general trend was current in engine manufacturing, where 3,826 units were produced by 15 companies the first six months and 3,552 units by 25 manufacturers during the second six months.

"There was a sharp rise in the number of airplanes shipped abroad during the second six months of 1929 to bring the total number of aircraft exported during the year to 341, with a valuation of $5,372,217," Mr. Rentschler said. "The export market in 1929 was more than three times that of 1928, when only 162 planes were shipped to other countries with a total valuation of $1,759,653."

DOMESTIC CONSUMPTION INCREASES IN RUSSIA

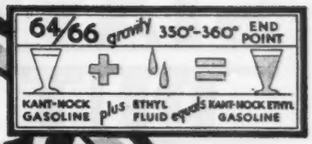
Domestic consumption of refined petroleum in Soviet Russia for the fiscal year ended September 30, last, amounted to 7,767,336 metric tons, an increase of approximately 14 per cent over the sales of 6,770,646 metric tons during the previous fiscal year.

Gasoline sales increased 36.7 per cent, with kerosene consumption gaining 31.6 per cent, the increases being due largely to the increased use of automobiles and tractors.

The following table, compiled by the Amtorg Trading Corp., American representatives of the Soviet, shows domestic consumption in Russia for the past two fiscal years.

	Metric tons	
	1929	1928
Fuel oil	5,566,879	5,079,084
Kerosene	1,565,718	1,190,004
Gasoline	128,956	94,321
Lub. oil	217,065	197,881
Machine oil	85,028	71,930
Miscellaneous	203,690	137,426
Total	7,767,336	6,770,646

Further substantial gains are looked for during the current fiscal year, heavy gains in imports of automobiles and tractors for use in Soviet Russia being expected.



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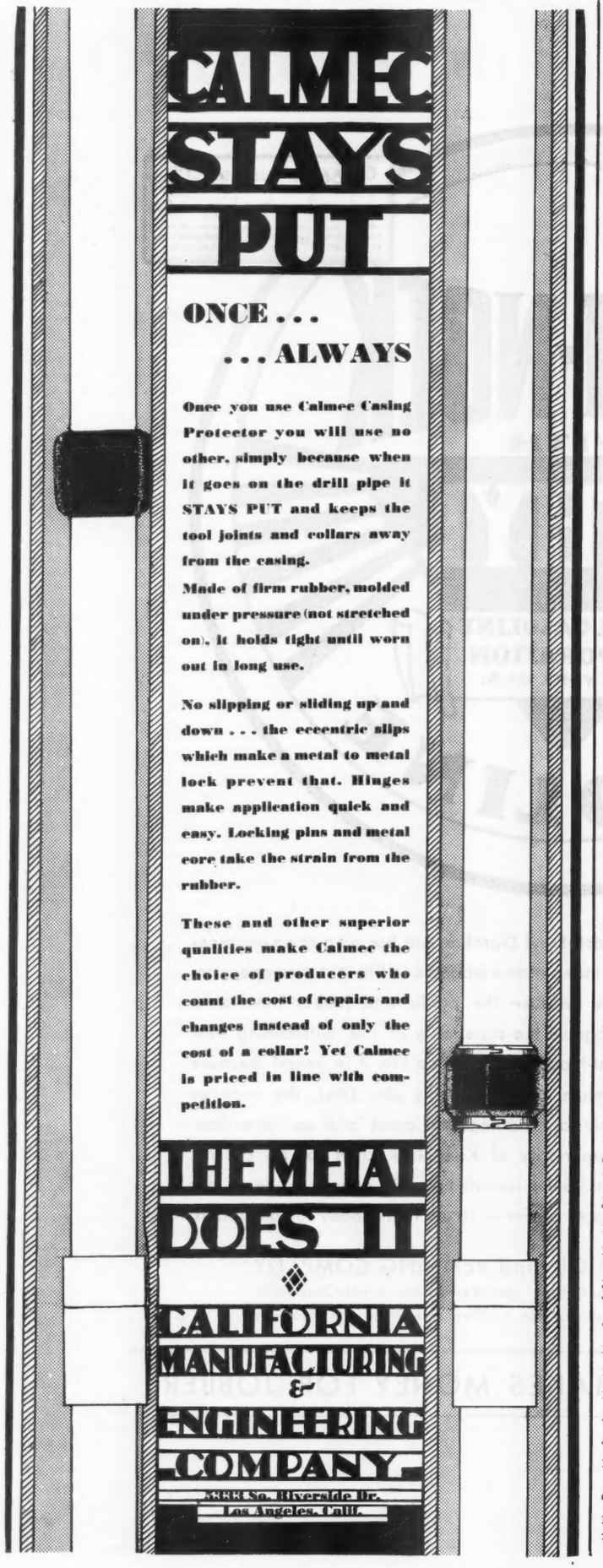
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WILDCAT OPERATIONS IN KANSAS

(Descriptions are East unless otherwise marked)

(Continued from Page 45)

ELK COUNTY

H. F. Fleming's No. 1 Shered, NW cor. Sec. 16-29-9 ....Spudding.
Empire and Arkansas Fuel's No. 1 Record, C NW NE SE Sec. 32-30-10 ....Drlg. 2,110 ft.

ELLIS COUNTY

Streeter & Stearns' No. 1 Leiker, SW NE Sec. 26-13-20w..Shut down 1,290 ft.
Byrene et al's No. 1 Fisher, NW SE Sec. 4-11-20w ....Shut down 1,000 ft.
Rush Oil Co.'s No. 1 Gatewood, NW cor. NW Sec. 4-15-20w ....Fishing 2,555 ft.

ELLSWORTH COUNTY

Tatlock et al's No. 1 Sackem, C SW SE Sec. 25-17-9w ..Drlg. 2,415 ft.

FORD COUNTY

McNabb et al's No. 1 Unknown, C SE Sec. 26-27-22w ....Shut down 400 ft.
Swain et al's No. 1 Kenthorne, C NW Sec. 21-25-24w ....Shut down 520 ft.

GRAHAM COUNTY

Gulf Coast Oil Co.'s No. 1 Johnson, C S half Sec. 27-8-25w..Shut down 4,340 ft.
Naylor et al's No. 1 St. John, NW SE SE Sec. 27-8-25w..Rig.

GREENWOOD COUNTY

Ward & McGinnis' No. 1 Henley, SW NE Sec. 23-25-9 ..Shut down 1,800 ft.
F. Konkay et al's No. 1 Rock, NW NE NE Sec. 7-27-12 ..Shut down 750 ft.

HARPER COUNTY

Beeler et al's No. 1 Bear, C NE Sec. 21-31-6w ....Shut down 1,390 ft.

HARVEY COUNTY

Superior's No. 1 Regier, SE NW Sec. 11-22-3w ....Shut down 3,164 ft.
Liggett et al's No. 1 Regier, C SE NW SE Sec. 2-23-3w..Fishing 3,355 ft.
E. W. Marland, Inc.'s No. 1 Neiman, C NE SE NE Sec. 8-24-2 ....Shut down 3,175 ft.
Mrs. Gay et al's No. 1 Grove, C NW NE NW Sec. 29-23-1w ....Shut down 3,360 ft.

HODGEMAN COUNTY

Phillips Pet.'s No. 1 Hausman, NW NE Sec. 30-22-22w..Drlg. 4,643 ft.

JEFFERSON COUNTY

Wichita Oil Co.'s No. 1 Simpson, NW cor. SW SW Sec. 19-10-17 ....Rigged up and shut down.

KINGMAN COUNTY

D. P. Fleeger's No. 1 Ashcraft, SE SW NE Sec. 16-28-7w ....Wilcox 4,343-50 ft.; water; total depth 4,445 ft.; shut down.
White Eagle's No. 1 Lorenz, C NE SW SE Sec. 25-27-5w..Shut down 4,128 ft.

LANE COUNTY

Robinson's No. 1 Dickerson, Sec. 11-18-27w ....8-in. csg. 2,625 ft.

LYON COUNTY

Sheedy et al's No. 1 Evers, C NE SE NE Sec. 4-21-10 ..Rig.
F. A. Balliere's No. 1 McKee, SW NE Sec. 32-21-11 ....Shut down 1,920 ft.
Sheedy et al's No. 1 Reese, SW SE Sec. 16-20-10 ....Shut down 1,200 ft.

MARION COUNTY

Empire O. & R. Co.'s No. 1 Black, C NE NW SW Sec. 27-19-2 ....Drlg. 2,070 ft.
Marshall et al's No. 1 Higgins, NE cor. Sec. 33-19-5 ....Rig.

McPHERSON COUNTY

Galt Brown et al's No. 1 Zeitlow, C NE SE SE Sec. 7-17-1w ....Drlg. 350 ft.
Dixie Oil Co.'s No. 1 Johnson, SW cor. Sec. 20-17-3w ....Drlg. 2,290 ft.
McCulloch Oil Co.'s No. 1 Cornelius, SW cor. Sec. 7-21-4..Underreaming 6-in. csg. 3,421 ft.
Kansas Oil Co.'s No. 1 Otto, SW NW Sec. 21-20-1w ....Chat 2,935-49 ft.; drlg. 3,132 ft.
Reynolds et al's No. 1 Koohn, NE SE NE Sec. 15-20-2w ..Total depth 3,500 ft.; water 3,443-50 ft.; abandoned.
Milmac's No. 1 Decker, NW cor. Sec. 11-20-3w ....Shut down 1,215 ft.
Transcontinental Oil Co.'s No. 1 Algers, NE SW Sec. 1-19-5w ....Underreaming 6-in. csg. 4,012 ft.; shut down.

MORTON COUNTY

Mangle et al's No. 1 Youngren, C SE NW Sec. 24-32-42..Spudded; shut down.

MORRIS COUNTY

Urschell et al's No. 1 Scott, NE SW Sec. 6-16-6 ....Shut down 1,600 ft.

NORTON COUNTY

Richards et al's No. 1 Colby, C SW Sec. 17-4-21w ....Rig.

OSBORNE COUNTY

Phillips Pet. Co.'s No. 1 Grieve, NW SE NE Sec. 6-7-12w..Drlg. 4,237 ft.

PAWNEE COUNTY

Prairie O. & G. Co.'s No. 1 Black, SW NE NE Sec. 11-20-18w ....Drlg. 3,605 ft.

PRATT COUNTY

O'Haver & Jones' No. 1 Garacke, C NE SW Sec. 7-26-14w ....Underreaming 8-in. csg. 3,590 ft.; shut down.
O'Haver & Jones' No. 1 Lunt, C SW NW Sec. 15-28-14w..Wilcox 4,754 ft.; water; shut down.
Wilcox O. & G. Co.'s No. 1 Bappin, SW NW Sec. 7-26-15w ....Drlg. 2,785 ft.

RENO COUNTY

Wilcox O. & G. Co.'s No. 1 McPheeters, SW NW Sec. 22-26-8w ....Drlg. 3,460 ft.
Witt's No. 1 Olsen, C SE NW Sec. 14-22-6w ....Water 2,846-60 ft.; underreaming 8-in. csg.
Skelly Oil Co.'s No. 1 Birkett, NE SW Sec. 30-24-7w ....Total depth 4,137 ft.; fishing.

RICE COUNTY

Tatlock et al's No. 1 Ploog, C SW SE Sec. 33-18-9w ....Rig.
Boucher's No. 1 Bieg, Sec. 16-21-10w ....Shut down 2,550-53 ft.; 10,000,000 ft. gas; completed.
Miller & Detrick's No. 1 Shumway, C SW Sec. 2-20-9w..Shut down 3,636 ft.; water.
Burgher's No. 1 Fair, C SE NE NE Sec. 14-21-10w ....Shut down 1,910 ft.
Derby Oil Co.'s No. 1 Johnson, C NW NE SE Sec. 24-20-6w ....Drlg. 2,895 ft.
Danciger et al's No. 1 Bell, C SW Sec. 16-19-8w ....Shut down 2,780 ft.
McCullough et al's No. 1 Williams, C NE Sec. 35-20-8w..Rig.

RILEY COUNTY

Grey et al's No. 1 Smith, NE SE Sec. 30-6-6 ....Shut down 1,970 ft.
Derby & Shaw's No. 1 Lindstrom, NE cor. Sec. 32-7-5e..Shut down 2,245 ft.

ROOKS COUNTY

A. H. Kruger's No. 1 Steis, NW SE SW, Sec. 12-9-16w..Shut down 570 ft.
Central Commercial's No. 1 Baxa, Sec. 22-9-17w ....Abandoned 3,686-92 ft.; water.

RUSH COUNTY

Danciger Oil & Refining Co.'s No. 1 Nave, NW cor. Sec. 26-17-17w ....Shut down 3,425 ft.
Milmac's No. 1 Mohr, C NW Sec. 11-18-16w ....Drlg. 915 ft.

SALINE COUNTY

Austin et al's No. 1 Olsen, NW SW SE Sec. 10-15-4w ...Shut down 3,690 ft.
Templeman's No. 1 Lanbengager, C SW Sec. 20-15-5w ..Shut down 3,805 ft.
Twin Mounds' No. 1 Weis, NW NE NW Sec. 20-13-4w ..Shut down 700 ft.

SEDGWICK COUNTY

Tavender et al's No. 1 McLean, SE SW SE Sec. 23-26-1w ....Shut down 50 ft.
Marland and Amerada's No. 1 Sensorth, NW cor. Sec. 25-28-4w ....Shut down 4,290 ft.
McCullough Oil Co.'s No. 1 Buckles, NW cor. SE Sec. 3-28-1w ....Fishing 1,115 ft.
LaFont et al's No. 1 Carlton, C SE SE SW Sec. 24-28-1e..Shut down 1,685 ft.

SHAWNEE COUNTY

Jenkins & Scott's No. 1 Sherman, NW NE Sec. 28-10-15 ....Shut down 985 ft.
Jenkins & Scott's No. 1 Haden, NE SE Sec. 8-12-14 ....Shut down 750 ft.

SHERIDAN COUNTY

Mandalin O. & G. Co.'s No. 1 Unknown, C SE SW SW Sec. 27-7-26w ....Spudded; shut down.

STAFFORD COUNTY

Gibson's No. 1 Mueller, C SW Sec. 11-23-14w ....Drlg. 3,315 ft.

STEVENS COUNTY

McNabb and others' No. 1 Ramey, C SW Sec. 1-33-38w..Rig.
Argus Gas Co.'s No. 1 Hobbe, C SE Sec. 17-32-37w ....Drlg. 2,400 ft.
W. Sidwell et al's No. 1 Kelly, SW cor. NE Sec. 16-34-38w ....Shut down 1,600 ft.

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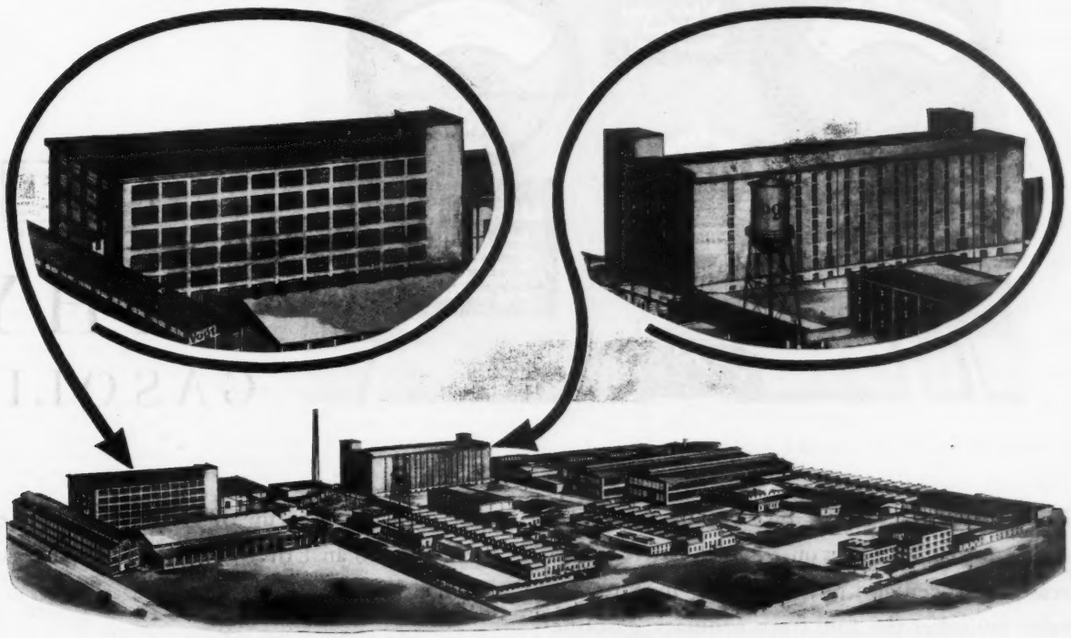

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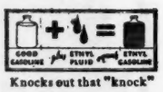
6

The *proof* that Ethyl develops more power

Right: This is the instrument board of a knock-demonstration machine. The wattmeter (at the left) registers power. The tachometer (at the right) records engine revolutions per minute. When this picture was made, the engine was running on ordinary fuel.

Below: When the lower picture was taken, Ethyl had been fed into the carbureter. The wattmeter shows that the power has risen to the maximum; the tachometer shows a corresponding increase in revolutions per minute.



Knocks out that "knock"

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The active ingredient now used in Ethyl fluid is tetraethyl lead

SMITH COUNTY

Phillips Pet.'s No. 1 Clydesdale, SE NW Sec. 23-5-14w ..Underreaming 6-in. csg. 4,075 ft.

SUMNER COUNTY

Hatfield's No. 1 Dauber, NE cor. Sec. 18-30-1w .....Shut down 50 ft.
Kingwood Oil Co.'s No. 1 Stayton, C NE Sec. 18-31-2w ..Chat 3,845-70 ft.; show oil; shut down 3,920 ft.
Slick et al's No. 1 Peasel, NW cor. Sec. 33-31-1w .....Chat 3,651-59 ft.; averaged 87 bbls. daily last week.
Lario O. & G. Co.'s No. 1 Osborne, NE SE Sec. 21-30-1w .....Chat 3,590-3,605 ft.; water; shut down 3,680 ft.
E. K. Carey and Laredo Oil Co.'s No. 1 Welsch, SW SE Sec. 5-34-1e .....Shut down 3,740 ft.
Davidson et al's No. 1 Strickland, SW cor. SE Sec. 12-35-1w .....Rig.

TREGO COUNTY

Dixie and Amerada's No. 1 Reitmayer, C NE NE Sec. 19-14-21w .....Drlg. 1,340 ft.
Prairie Oil & Gas Co.'s No. 1 Kutina, C NE SW NE Sec. 29-15-21w .....Drlg. 3,961 ft.
Phillips Pet. Co.'s No. 1 Spitz, SE cor. Sec. 24-12-25w ...Estimated 15 bbls. 4,160-65 ft.; total depth 4,169 ft.; shut down.
Day et al's No. 1 Gugler, SW NE NE Sec. 36-12-21w ....Shut down 50 ft.
Day et al's No. 1 Unknown, NE NW SW Sec. 2-11-21w ..Underreaming 3,415 ft.

WASHINGTON COUNTY

McCool & Vincent's No. 1 Linn, NW cor. NE Sec. 27-4-3..Shut down 3,100 ft.

WOODSON COUNTY

Oko Oil Co.'s No. 1 Mueller, SW NE NE Sec. 2-24-14 ....Rig.

WILDCAT OPERATIONS IN NEBRASKA

FRANKLIN COUNTY

U. R. Drlg. Co.'s No. 1 Brunkle (twin well), C NW SW NE Sec. 2-3n-13w .....Rig.

CHASE COUNTY

Chase Pet. Co.'s No. 1 Ingold, C NE Sec. 24-6n-38w .....U.R. 5-in. csg.; T.D. 4,265 ft.

FURNAS COUNTY

Southwestern Pet. Corp. of Nebraska's No. 1 Montague, SE SW SW Sec. 28-1n-22w .....Shut down 1,750 ft.
Graham Bros.' No. 1 Edwards, NW SW Sec. 13-2n-22w ..Shut down 3,250 ft.

RICHARDSON COUNTY

Norton et al's No. 1 Hauser, NE cor. Sec. 26-1-14 .....Location.

ROCK COUNTY

North Central Dev. & Drlg. Co.'s No. 1 Leonard, SE cor. NE Sec. 14-32-18w .....Drlg. 900 ft.

WEBSTER COUNTY

Mid-Kansas Exploration Co.'s No. 1 Platt, C SE one-half Sec. 3-1n-11w .....Shut down 555 ft.

SOME ASPECTS OF GASOLINE ABSORPTION

(Continued from Page 38)

oil, may be determined graphically from Figure 1 or by Equation 1.

$$x_1 = \frac{\pi}{P} y_0 = \frac{.075}{2.8} = .0268 \text{ mols butane per mol absorber oil.}$$

Then, from Equation 2, we may find the oil to gas ratio, R.

$$R = \frac{y_0 - y_n}{x_1 - x_0} = \frac{.075 - .045}{.0268 - 0} = 1.12$$

mols absorber oil per mol inert gas.

Equation 3, the general equation for what Lewis calls the operating line may now be plotted in Figure 1. It is shown in Figure 1 as A, has a slope of 1.12, intersects the ordinate at the value of y_n, and intersects the equilibrium line at x_1, y_0.

Now, departing from Lewis' analysis, it may easily be shown, either graphically or mathematically, that, by stepping over horizontally from the point a on the line A to the equilibrium line and then up vertically to A and so on, the intersections of these steps with the equilibrium line represent the conditions of each plate. Thus the point a, being a point of Equation 3 and already having been shown to give the value of y_0, gives the concentration of butane in the gas leaving the top plate and that in the liquid entering that plate. Reading horizontally across from a to the equilibrium line gives the value, x_n, of the liquid in equilibrium with this gas, that is, the liquid overflow from the top plate to the next plate below, n — 1. This value of x_n stepped up vertically to the A line then determines the value y_{n-1}, the concentration of butane in the gas leaving the plate n — 1, and this value, stepped over horizontally to the equilibrium line determines the composition of the overflow, x_{n-1}, from this plate and entering the next plate, n — 2, which value in turn determines y_{n-2} when stepped up to the A line.

Continuing thus, we may determine the conditions throughout the column and it is possible to determine the change in composition of both gas and liquid from plate to plate. It is noticeable in this particular case that the change is very great for the top plate and rapidly decreases so that a comparatively small number of plates rapidly approaches the equivalent of an infinite number as far as utility is concerned. These values are tabulated below and are plotted in Figure 3. It is seen that for butane four or five plates are practically equivalent to an infinite number.

TABLE 2—CHANGE IN BUTANE CONCENTRATION, y, IN GAS FROM PLATE TO PLATE IN COLUMN OF INFINITE PLATES EXTRACTING 40 PER CENT OF INITIAL BUTANE

Plate No.—	y	Change in y from plate to plate	% of total change in y for entire column
n (top)	.045	....	....
n — 1	.063	.018	60.00%
n — 2	.0702	.0072	24.00%
n — 3	.07308	.00288	9.60%
n — 4	.074232	.001152	3.84%

It should be noticeable from Figure 1 and also from the above figures that the change in concentration bears a constant proportion to that for the next plate above, namely 40 per cent, or the per cent extraction of butane for the column as a whole, and it may be shown mathematically that this is the case, that is, referring to Figure 1:

$$bc = E \times ob$$
$$\text{and} \quad cd = E \times bc$$
$$\text{and} \quad de = E \times cd \quad \text{etc.}$$

One Plate Column

Having determined the conditions for butane existing throughout a column having an infinite number of plates let us now study the other extreme, the case of a column having but one plate. (This is the extreme in the ideal case of a plate column but I have actually seen in practice columns having less than one equivalent plate!) Our column becomes that shown in Figure 2 when n = 1. Again we desire to extract 40 per cent of the butane. We may say at once, as before, that y_1, the concentration of butane in the residue gas, is .045. In this case the rich oil is in equilibrium with the residue gas, therefore $x_1 = \frac{\pi}{P} y_1$ or .01605, the concentration of butane in the rich oil. Furthermore, $R = \frac{y_0 - y_1}{x_1 - x_0}$ or 1.87. The oil to gas ratio is thus 1.87 for one plate against 1.12 for infinite plates.

Plotting the general equation for R, Equation 3, gives the line B, Figure 1, and it is seen that it passes through the ordinate at the same point as line A, and has a slope of 1.87. Stepping off horizontally and vertically as before, we complete one full step or plate within the limits of the chart. It is apparent that any line drawn between A and B will

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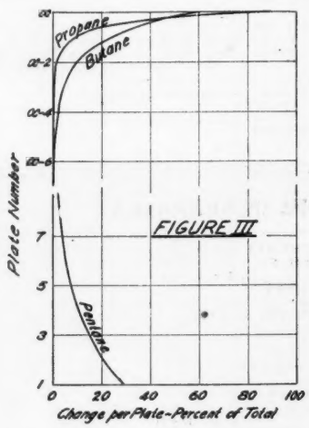
represent the condition for some finite number of plates between unity and infinity. The zone between A and B thus defines the limits of the operation. The finite number of plates required for any given value of R between these limits may easily be determined graphically as is shown in Figure 4, which is the same as Figure 1 except that it is drawn to a larger scale for greater clarity.

In addition to the equilibrium line and A and B, four other R lines are shown,



C, D, E, and F, having slopes, or R, taken arbitrarily as 1.4, 1.3, 1.2 and 1.15 respectively. We may now step off the plates for each of these lines as shown. The first horizontal step, ob, is the same for all and the first vertical steps, bc_1, bd_1, be_1, and bf_1 all fall on the same line, bb_1. Examining the system of steps for the line C, it is seen that the step obc_1 completes one full plate. The next step, $c_1c_2c_3$, however, falls partly above the upper limit of the system, y_0, thus indicating that a value of R of 1.4 will extract 40 per cent of the butane with between one and two ideal plates, and the fractional part of a plate may be taken as $\frac{c_2c_4}{c_2c_3}$, that is, the proportional part of the vertical step falling within the limits of the system. This is only an approximation but is sufficiently accurate for the purpose of the problem. Similarly, the line D indicates one complete plate, obd_1, and the fractional part $\frac{d_2d_4}{d_2d_3}$ of a second; E indicates two plates, obe_1, and $e_1e_2e_3$, and the fraction $\frac{e_4e_6}{e_4e_5}$ of a third; and F shows three full plates with the fraction $\frac{f_6f_8}{f_6f_7}$ of a fourth. Evaluating these fractions, we secure the data tabulated below.

TABLE 3—NUMBER OF PLATES REQUIRED FOR GIVEN VALUES OF R IN EXTRACTING 40% OF BUTANE

R line (Fig. 4)—	R	No. of plates
A	1.87	1.00
C	1.40	1.66
D	1.30	1.93
E	1.20	2.68
F	1.15	3.55
B	1.12	inf.

These values are plotted in Figure 5 (Curve A) and show how rapidly the value of R approaches that for an infinite number of plates with a relatively small number.

It will be noted that an infinite number of plates require (for this particular case) 60 per cent of the absorber oil required for a one plate column, and it may be shown mathematically that R for infinite plates is equal to that for one plate times the fraction of the component not extracted, or,

$$R_{\infty} = R_1(1 - E) \qquad (4)$$

Having determined R for any finite number of plates, the value x_1, the concentration of the component in the rich oil leaving the system may be found from Equation 2.

The various concepts of the problem as developed in the foregoing sections may be considered as fundamental with respect to the "base component" (butane, in this hypothetical case) and we may now direct our attention to the study of the conditions affecting the extraction of the other components.

Extraction of Propane

Considering first the case of a column of infinite plates, we may say immeditely that R is known, having already been fixed for the entire system by the requirements of the base component, butane, and that, if the R line is drawn in Figure 1 for propane, it will be parallel to that drawn for butane since both have the same slope, R.

As in the case of butane, it is evident that the rich oil will be in equilibrium with the inlet gas (in the case of infinite plates), so x_1, the concentration of propane in the rich oil, may be determined from Equation 1, $x_1 = \frac{\pi}{P} y_0 = .0118$.

Using this value in Equation 2 we may solve for y_n, the concentration of propane in the residue gas, $y_n = y_0 - R(x_1 - x_0) = .1117$, and the extraction, E, of propane is, $E = (y_0 - y_n)/y_0 = .106$, or 10.6 per cent.

The general equation, Equation 3, may now be plotted in Figure 1 giving the R line for propane with infinite plates. This line is shown as C in Figure 1. It is parallel to A, intersects the equilibrium line at y_0, x_1, and the ordinate at y_n. As in the case of butane we may determine the condition on each plate by stepping off the plates graphically, determining x and y for each plate, or we may calculate the value of y for each plate from the relationship shown previously for butane that

$$bc = E \times ob$$
$$\text{and} \quad cd = E \times bc$$
$$\text{and} \quad de = E \times cd \quad \text{etc.}$$

thus securing data similar to that shown in Table 2 for butane. These data are given below in Table 4.

TABLE 4—CHANGE IN PROPANE CONCENTRATION, y, in GAS FROM PLATE TO PLATE IN COLUMN OF INFINITE PLATES EXTRACTING 40% OF INITIAL BUTANE

Plate No.—	y	Change in y from plate to plate	% of total change in y for entire column
n (top)	.1117	.....	....
n — 1	.12355	.01185	89.40%
n — 2	.124806	.001256	9.47%
n — 3	.124939	.0001331	1.00%

These values are plotted in Figure 3 and show how the plate to plate change for this lighter component is much greater than that for butane. It is readily seen from Figure 1 that, as the angle between the equilibrium line and the R line increases, this is the case. For propane, under these conditions, the first four plates out of an infinite number do 99.87 per cent of the work of the column.

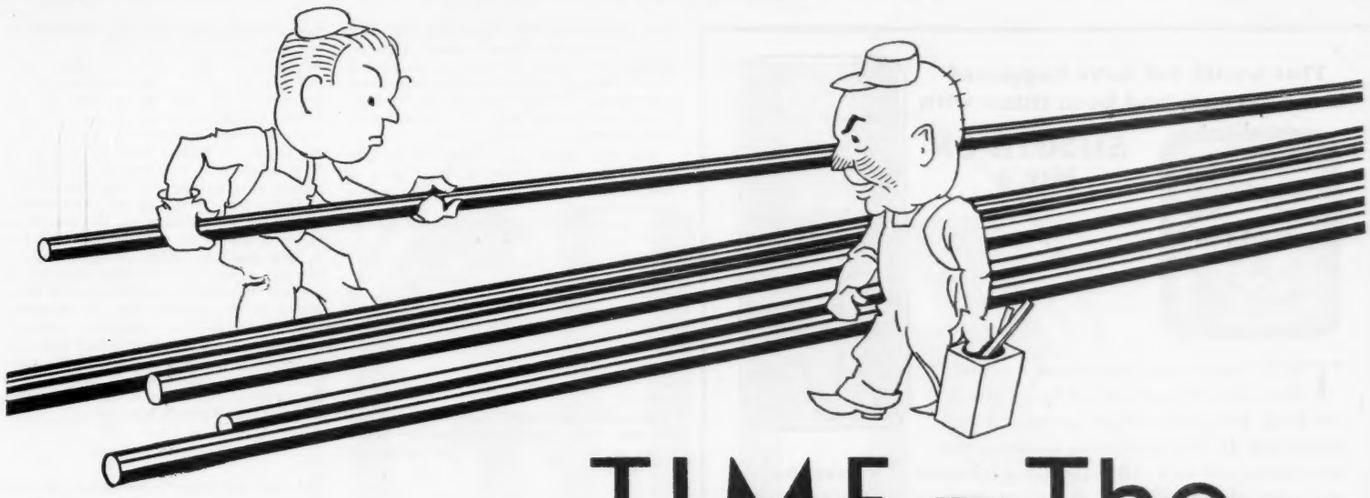
For one plate, our base calculations gave us an oil to gas ratio of 1.87 and we may now determine the conditions for propane with this value of R. From Figure 2, letting n = 1, we may say $y_0 - y_1 = R(x_1 - x_0)$. Since x_1 and y_1 are in equilibrium we may substitute the value of y_1 in terms of x_1 (Equation 1) in this expression and solve for x_1.

$$x_1 = \frac{y_0 + Rx_0}{R + P/\pi} \qquad (5)$$

$= .010$, concentration of propane in rich oil.

Then $y_1 = \frac{P}{\pi} x_1 = .106$, the concentration of propane in the residue gas. The extraction, E, of propane is, $E = (y_0 - y_1)/y_0 = .152$. Thus the extraction of propane with one plate is 15.2 per cent against 10.6 per cent for infinite plates showing that, as the contact (number of plates) is reduced, the selectivity of the system is lowered resulting in greater absorption of the less desirable lighter products for a given absorption of the base component.

Equation 3 may now be plotted giving the R line for one plate as shown by D in Figure 1. It is parallel to B, having the same slope, R, but unlike A and B it does not, of course, intersect C on the ordinate since the value of y in the res-



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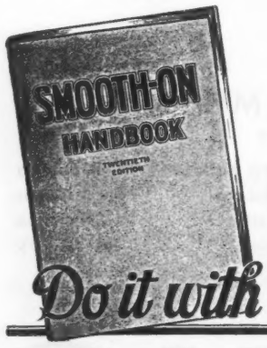

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idue gas is not the same for the two cases. R lines for finite numbers of plates greater than unity will lie between C and D but their location cannot be determined immediately on the chart, as in the case of the base component, since they do not pass through a common point.

For two plates, R is found to be 1.29 from Figure 5. Referring to Figure 3 and letting n = 2, we may say for a two plate column,

$y_0 - y_2 = R(x_1 - x_0)$ for the column as a whole

$y_0 - y_1 = R(x_1 - x_2)$ for the bottom plate.

$y_1 - y_2 = R(x_2 - x_0)$ for the top plate

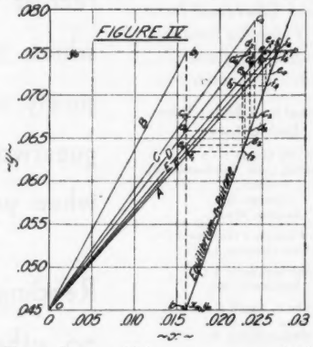
$\frac{P}{\pi} - x_1 = y_1 = Kx_1$ (letting $\frac{P}{\pi} = K$)

and $\frac{P}{\pi} - x_2 = y_2 = Kx_2$

Dropping the term, x_0, for simplicity we may solve these equations for y_2 in terms of known quantities and arrive at the result:

$$y_2 = \frac{y_0}{\left(\frac{R}{K}\right)^2 + \frac{R}{K} + 1} \qquad (6)$$

Substituting the known numerical values, we find, $y_2 = .11$, the concentration of propane in the residue gas. The extraction, $E = \frac{y_0 - y_2}{y_0} = .12$, or 12 per cent of the propane is extracted with two plates. The concentration of propane in the rich oil, x_1, may be found from Equation 2 and is .0116. The general equation, Equation 3, for the R line may now be plotted in Figure 1 as E and the two plates stepped off as shown. This serves as a check, since it is evident that if it did not plot two full steps there must be some error.



A three-plate column may be calculated but the fundamental principle of the effect of the number of plates on selectivity is well established by having set up the conditions for one, two and infinite plates. These data are summarized in Table 5.

TABLE 5—EXTRACTION OF PROPANE WITH ONE, TWO AND INFINITE PLATES WHILE EXTRACTING 40% OF BUTANE

No. of plates—	R	y_n	x_1	E
1	1.87	.106	.010	15.2%
2	1.29	.110	.0116	12.0%
Infinite	1.12	.1117	.0118	10.6%

It should be noted that while the concentration of propane increases in the rich oil as the number of plates increases, the quantity of absorber oil has decreased, resulting in lower extraction and greater selectivity.

Pentane

In the study of the extraction of pentane, as in the case of propane, we shall first consider the case of a column of infinite plates. R is fixed by the conditions for butane at 1.12. If we assume, as in the other cases, that x_1 and y_0 are in equilibrium and determine x_1 from Equation 1, we have .0625 as the concentration of pentane in the rich oil. Substituting these values in Equation 2 and solving for Y_n, the concentration of pentane in the residue gas, we arrive at the impossible condition of a negative value for y_n, —.020. This merely means that with an infinite number of plates the oil to gas ratio necessary to extract 40 per cent of the butane is more than is necessary to extract all of the pentane. We therefore discard the assumption that the rich oil and inlet gas are in equilibrium but can obviously say that y_n is zero. Substituting this value in Equation 2 and solving for x_1, the concentration of pentane in the rich oil, we find it to be .0446. Using this value for x_1 in the general equation, Equation 3, we may plot the R line in Figure 1 as the line F. It is parallel to A and passes through the origin, intersecting the equilibrium line at that point. Stepping off the plates as before we may determine the conditions on each plate. It will be observed that in this case the great changes occur at the rich end of the absorber, that is, the pentane is taken up rapidly in the lower plates of the column and in decreasing increments as we progress upwards. Moreover, it may be shown that the value of y from any plate is equal to the value of y from the plate below multiplied by the ratio of the slope of the equilibrium line to that of the R line, or

$$y_m = y_{m-1} \times \frac{K}{R}$$

As for the other components, we may determine the change in y from plate to plate either graphically or by means of the above equation. Data for this relationship are given below in Table 6.

TABLE 6—CHANGE IN PENTANE CONCENTRATION, y, IN GAS FROM PLATE TO PLATE IN COLUMN OF INFINITE PLATES EXTRACTING 40% OF INITIAL BUTANE

Plate No.—	y	Change in y from plate to plate	% of total change in y for entire column
0	.0500	...	...
1	.0357	.0143	28.6%
2	.0255	.0102	20.4%
3	.0182	.0073	14.6%
4	.0130	.0052	10.4%
5	.00928	.00372	7.4%
6	.00663	.00265	5.3%
7	.00473	.00190	3.8%
8	.00338	.00135	2.7%

These data are plotted in Figure 3. The decreased rate of change from plate to plate compared with the other components is apparent and is due to the smaller angle between the equilibrium line and the R line. Here the bottom eight plates of the column do about 93.5 per cent of the total work of the column in extracting pentane whereas in the case of propane the top four plates do 99.87 per cent of the total work.

Pentane in Residue Gas

For the case of a one plate column we may solve for x_1, the concentration of pentane in the rich oil, using Equation 5 as in the case of propane, and find it to be .0187. The concentration of pentane in the residue gas, y_1, is found from Equation 1 to be .015, and $E = (y_0 - y_1)/y_0 = .70$, or 70 per cent of the pentane is extracted with a one plate column as against 100 per cent with infinite plates.

The general equation, Equation 3, may now be plotted in Figure 1 and gives the R line for one plate as shown by the line G. It is parallel to B and intersects the ordinate at y_1. The single plate may be stepped off as shown.

For the condition of a two plate column, y_2, the concentration of pentane in the residue gas may be found from Equation 6 as in the case of propane, using the value of R as determined for two plates, i.e., 1.29, for butane. Solving this equation, y_2 is found to be .0096 and $E = (y_0 - y_2)/y_0 = .808$, or 80.8 per cent of the pentane is extracted with two plates. From Equation 2, x_1 is found to be .0313. The R line for two plates may now be plotted in Figure 1 as line H and the two plates stepped off as shown as a check.

From the statement made early in the discussion of the case of pentane to the effect that the oil to gas ratio for infinite plates was greater than necessary to give complete extraction of the pentane, one might jump to the conclusion that, with this same ratio, it should be possible to secure complete extraction with a finite number of plates. This, however, is not the case. For complete extraction it is obvious that y_n, the concentration of the component in the residue gas, must be zero, therefore, since the R line in all cases intersects the ordinate at the value y_n, the R line would have to pass through the origin and would therefore intersect the equilibrium line at that point and it is evident that only an infinite number

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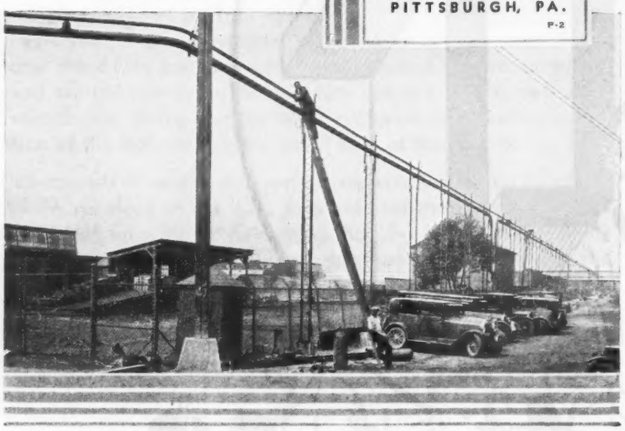

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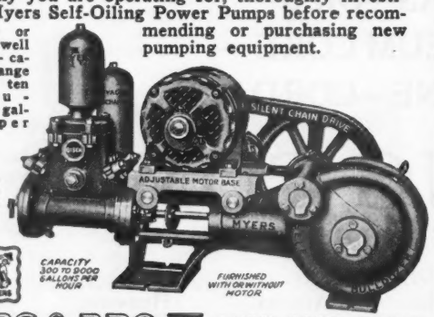

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of steps will reach the point of intersection. It is however, also evident that a relatively small number of plates gives a very close approach to the infinite. With a fine number of plates, complete extraction may only be secured with an infinite oil to gas ratio. In this case the R line is vertical and complete extraction is secured, although, because of the infinite quantity of absorber oil, the concentration of the component in the rich oil would still be zero.

General Considerations

In the general case of a column with infinite plates, if we assume that the rich oil is in equilibrium with the inlet gas (as was the case with all but the pentane) we may say,

$$y_0 - y_n = R(x_1 - x_0)$$

$$\text{and} \quad \frac{P}{\pi} x_1 = y_0 = K x_1$$

$$\text{and} \quad E = \frac{y_0 - y_n}{y_0}$$

From these expressions may be developed the relationship,

$$E = R/K \qquad (7)$$

which, expressed in words, states that the extraction of any component (with infinite plates) is equal to the ratio of the oil to gas ratio to the ratio of vapor pressure of the pure component to the operating pressure, or is equal to the ratio of the slope of the R line to that of the equilibrium line. This expression shows that the extraction of a component is independent of the original quantity in the gas and that it will be less than 100 per cent so long as the slope of the R line is less than that of the equilibrium line. It will be 100 per cent when the slopes are the same in which case the two lines would coincide and each of the infinite plates would perform an infinitesimal part of the extraction. When the slope of the R line becomes greater than that of the equilibrium line the apparent extraction is greater than 100 per cent and the equation no longer holds, since we have already seen, as in the case of pentane, that in this case the rich oil and the inlet gas are no longer in equilibrium. Under these conditions the majority of the extraction occurs in the lower portion of the column whereas in the case of incomplete extraction the upper portion performs the greater part of the work.

From Equation 7 it may further be shown that the selectivity of a system is independent of the operating pressure. The ratio of the extraction of two components in the system is a measure of selectivity. For any two components we may say,

$$E_1 : E_2 :: (R/K)_1 : (R/K)_2$$

or, since R must be the same for both components, and replacing K by the expression, P/π,

$$\frac{E_1}{E_2} = \frac{(P/\pi)_2}{(P/\pi)_1}$$

and further, since π is the same for all components in one system, we may finally say,

$$\frac{E_1}{E_2} = \frac{P_2}{P_1}$$

Thus selectivity is a function only of vapor pressure and is independent of operating pressure.

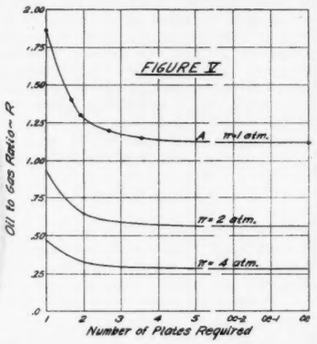
Equation 7 also shows the rather obvious but important relationship existing between the oil to gas ratio and the operating pressure, namely that, for any given operating temperature and for any given extraction, the oil to gas ratio, R, is inversely proportional to the operating pressure, π. This may also be shown to be the case for a finite number of plates and this relationship is shown graphically in Figure 5.

From the foregoing it is thus apparent that we may secure the benefits of reducing the amount of absorber oil used by raising the operating pressure without affecting the selectivity of the system either adversely or to our advantage. Selectivity is affected materially by the number of plates used and by the operating temperature. The effect of the number of plates has already been thoroughly discussed. The data secured during the course of the paper are collected below in Table 7.

TABLE 7—EXTRACTION OF PROPANE, BUTANE, AND PENTANE WITH COLUMNS OF ONE, TWO AND INFINITE PLATES

No. of plates—	R	E-Propane	E-Butane	E-Pentane
1	1.87	15.2%	40%	70.0%
2	1.29	12.0%	40%	80.8%
Infinite	1.12	10.6%	40%	100.0%

These data are plotted in Figure 6 and show graphically the pronounced effect



of the number of plates on the selectivity of the system.

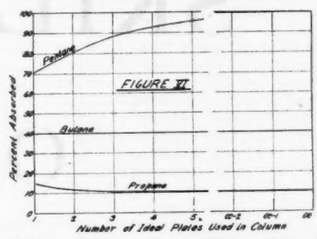
The effect of temperature on selectivity over a wide range is shown in the tabulation below. Using vapor pressure data published by Podbielniak[3] and applying the relationship that extraction is inversely proportional to vapor pressure, the relative extraction of propane and butane with respect to pentane, taken as 100, is shown in Table 8.

TABLE 8—EFFECT OF TEMPERATURE ON SELECTIVITY

Temp. ° C.—	E-Pentane	E-Butane	E-Propane
—30	100	17.1	3.08
0	100	23.7	5.18
30	100	28.4	7.55

This shows the definite and already well known tendency of lower temperatures to increase selectivity but in operation the saving accomplished by greater selectivity and lowered oil to gas ratios must be carefully balanced against the increased cost of securing low temperatures.

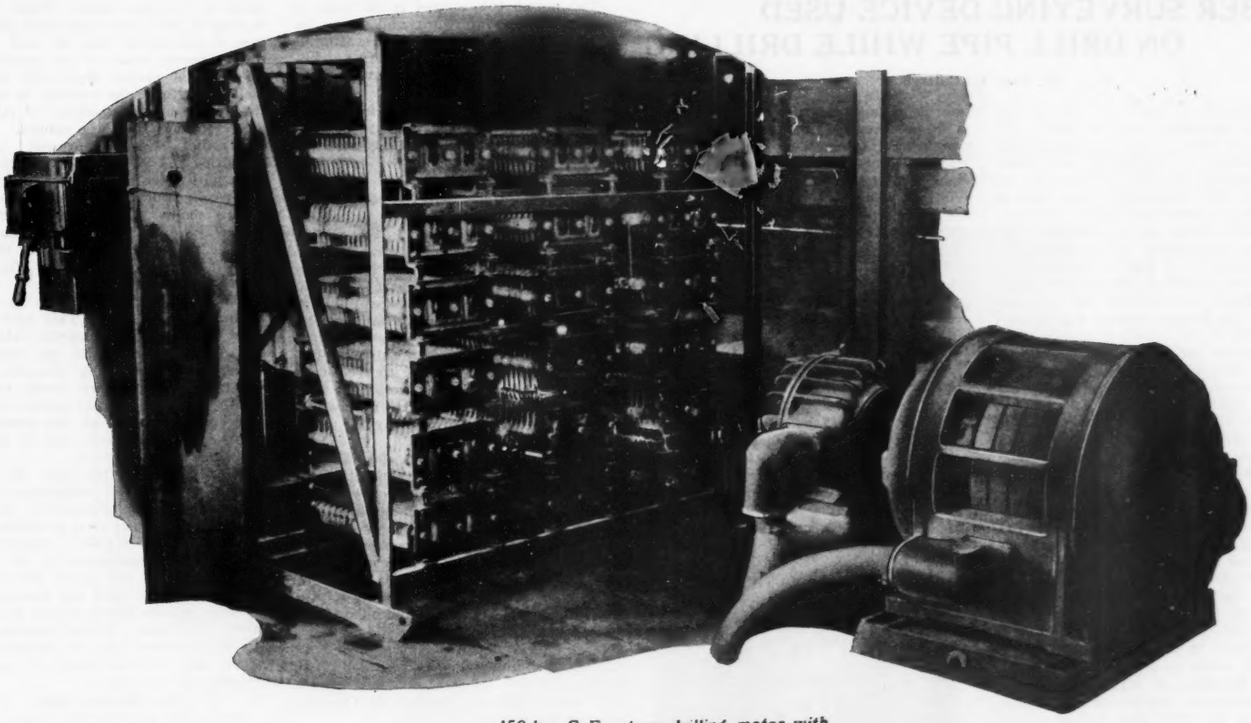
There are many other concepts of a fundamental nature which could be derived from this method of analyzing the



problem of absorption. The effect of changing the temperature from top to bottom of the column and a comparison of intercooling to maintain a constant temperature against starting with a lower temperature at the top to arrive at the same bottom temperature could be approximated. Much discussion could be brought out as to the choice of the number of plates to be used in an actual column. Space does not permit, however, and it is the writer's hope that the foregoing purely theoretical discussion will aid in the actual design of absorption systems.

MUST PAY BACK TAXES

WASHINGTON, D. C., Feb. 3. — In the case of the Arkansas Fuel Oil Co. against the State of Arkansas the Supreme Court of Arkansas has held that the company must pay back taxes on its oil and gas leases from 1924 to 1928, inclusive. This is the second appeal. The court held that oil and gas leases may be separately assessed and that the assessment of back taxes against corporations and not individuals did not violate any provisions of the Federal constitution.



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RIEBER SURVEYING DEVICE USED ON DRILL PIPE WHILE DRILLING

By Jack C. Ballagh

The magnetic compass is one of the earliest instruments used to obtain the direction of deviation of bore-holes. This same problem of surveying well bores now confronting the oil industry was investigated very thoroughly years ago in the drilling of test holes for the location of ore bodes in the mining industry. In one of its early forms the compass was located in a mass of gelatin, which, upon standing in the well at the point of reading, solidified, imprisoning the compass needle in the gelatin, so that its position at the time of hardening might be read upon reaching the surface. This method was used with notable success in surveying many test holes through both magnetic and nonmagnetic regions. Peculiarly it is one of the few methods in which the surveys have been checked by subsequent excavation. Results from several surveys by this method were checked in this way and found to be accurate, even in regions containing magnetic ores.

Considering that the hole has been maintained reasonably straight, the compass, during drilling, becomes of secondary importance. It is not so important to know the direction of a horizontal deviation of 100 feet as it is one of 500 or 1,000 feet. Nevertheless it is a valuable addition to the record.

When it comes to coring, however, the compass becomes of vital importance. With a surveying instrument which may be used on the drill pipe during actual drilling it is possible not only simultaneously to obtain the direction of the dip of the strata but likewise to correct it for the angularity of the hole. This is of utmost value in obtaining the correct geological data from a field. There is no doubt that many wells have been poorly located from misinterpretation of core data.

Spring-Driven Mechanism

Development of a surveying instrument known as the Rieber indicates new principles in recording. This instrument is a spring-driven mechanism whose motive power is through a train of specially constructed gears and movements not affected by the vibration within the pipe. Speed control is furnished by a fan-type impeller operating in the lubricant, which incloses the entire mechanism.

Three cams are operated by the spring-driven mechanism, one for the recording of a plumb bob position, one for recording of the compass position and one for transferring the reading discs and resetting the trip for the next reading. The mechanism drives a disc-transferring device which takes one of the aluminum recording discs from a storage magazine, exposes it to the recording mechanism and moves it into the storage magazine. The reloading is comparable in action to the loading of a repeating rifle.

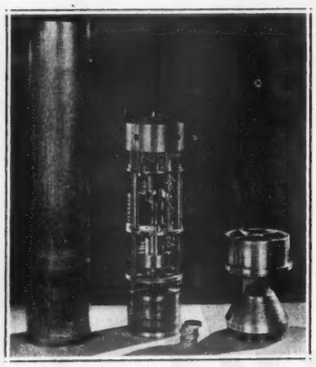
This mechanism is operated at the will of the operator by an inertia type of trip mechanism which depends upon the particular type of change in the rotational speed of the drill pipe.

The inertia mechanism of the first device of this type manufactured consisted of a heavy flywheel. Although the fundamental idea was correct, it was almost impossible to keep the flywheel from tripping at other than desired points. Further, the heavy weight of the flywheel was destructive to the bearings upon which it rotated, as could be determined in a mechanism which is handled as severely, and is subject to as much jarring as is the drill pipe.

Will Not Operate at Other Points

The mechanism in the instrument as it now stands has withstood all possible tests and it will not operate except at the definite points desired by the driller and at which time he goes through the cycle of operations specified for the working of the device. The inertia mechanism here comprises a body of mercury inclosed in a steel chamber. The motion of the mercury relative to the chamber is resisted by a four-bladed impeller surrounded by the mercury chamber. As long as normal rotation of the drill pipe is in the progress, the impeller and the mercury rotate together. A spring which may be adjusted to a wide range of tensions tends to retain the impeller in a set relation with respect to the casing. If the drill pipe is rotated at a predetermined speed slightly higher than ordinary usage and then stopped, the mercury will tend to continue rotation and the pressure of the mercury against the impeller will be sufficient to rotate it against the spring tension. If the drill pipe has been rotated at or above the correct speed for the tripping of the instrument, a crank arm actuated by the impeller shaft will be rotated far enough under the influence of the mercury to trip the clock-work release mechanism.

The mercury inertia member provides a heavy body practically frictionless and not affected by any jarring or movements other than the specific type method



Rieber surveying instrument, showing spring motor mechanism and its protected case.

speed variation. The springs may be set to provide a tension for operation at any speed above normal operating speed.

To guard against tripping the device during the whip action of the bit, when it releases from hang-ups, the crank arm is connected to the impeller shaft by means of a ratchet. Upon release from such hang-ups the catch on the ratchet simply releases, allowing the relative rotation of the crank arm on the shaft without tripping the mechanism.

Plumb Bob Shows Inclination

Inclination is registered by recording the position of a plumb bob. This plumb bob is constructed of a brass shell filled with lead for obtaining the greatest possible weight in a restricted space. It is provided with a hardened alloy steel marking point and is suspended on a special silk line. Such a method of suspension gives a frictionless pivot, a vital necessity in any surveying instrument. Lag or friction in the support of a pendulum or plumb bob prevents it from hanging in a vertical line. It would simply come to rest in a direction offset from the true vertical by an amount equal to the friction drag. The cumulative effect of continuous inaccurate readings of an instrument in which friction is present would throw a survey considerably off the true values.

When running into position for recording the plumb bob is locked so that it has no opportunity to vibrate back and forth with the jarring of the drill pipe. Upon actuation of the tripping mechanism the clockwork mechanism releases the plumb bob and after a period of time sufficient for it to come to rest even under the most severe conditions it is lifted a definite amount by one of the cams driven from the clockwork mechanism and dropped on an aluminum recording disc in position beneath it. The drop is about one-fourth inch. The hardened steel point makes a punch mark on the disc and its distance from the center indicates the inclination of the hole.

The plumb bob is used in all types of accurate surveying work and is an infallible vertical pendulum. Operating in an oil bath, it comes to rest very quickly. It is protected from any movement of the oil by an inclosing shield. The depressions made by the plumb bob in the aluminum discs can be easily read to within 1 degree, which is amply accurate for all practical needs.

Direction of Drift

Direction of the drift is recorded on the opposite side of the same aluminum disc upon which the plumb bob reading is obtained. An accurate compass contained within the instrument determines the position of another hardened metal point. At the instant of reading the compass is lifted from its bearings and this point is impressed into the aluminum disc. At the same time a third impression is made upon the disc to record its position relative to the instrument case so that a point is obtained from which the orientation of a core may be measured.

This compass has been especially designed for this instrument and all conditions affecting the operating of well surveying have been taken into consideration in the compass design. Two jewel bearings are used in the instrument, these bearings being rigid with the case so that the dip of the magnetic field does not cause any variation in the reading within the range of the instrument. The steel from which the compass needle is made is a newly developed magnetic steel containing a high percentage of cobalt. It is not affected by jars and jolts which will cause ordinary compass material to lose its magnetism.

When the mechanism is tripped the compass is unlocked and after a suitable period of time has been allowed for it to come to rest a cam driven by the clockwork mechanism causes a working point which is carried by the compass needle to strike the aluminum disc. The blow is under spring pressure and the compass bearings receive none of the impact or rebound of the blow.

For Use in Open Hole

This instrument is primarily designed for use in open hole and is built on the hypothesis that after a hole is cased under normal conditions no corrections will be made in it. The important thing is to determine the incipient deviation of the hole and to straighten it before it gets crooked and, consequently, before it has been cased.

Inside a casing, particularly inside two or three strings of casing, so much of the magnetic field is by-passed through the steel that accuracy of a compass needle is impaired, although innumerable experiments and the results of a long experience in nine surveys have shown that the compass is a reliable instrument for open-hole readings. The compass records on the disc may easily be read accurately.

An ingenious but simple mechanism is used to supply discs for the reading from a supply magazine, place them in the exact position for recording, and after the record has been made, transfer them to a storage magazine. The capacity of the machine is 40 discs; consequently 40 records may be taken during the time the pipe is in the hole. The driving spring will operate the mechanism this many times with power to spare.

The discs are of aluminum, approximately 1 inch in diameter and about one-sixteenth-inch thick. They are consecutively numbered before placing in the machine. The magazine is a tubular member and the discs are stacked within it. A transfer member operates beneath this magazine, taking a disc from the bottom of the stack and transferring it to the recording position. At the same time, the disc upon which the previous record has been made is transferred to the bottom of the storage magazine. At each operation of the clockwork mechanism, a new disc therefore is placed in position for the next record.

Reading the Discs

Reading of the discs is accomplished in a simple manner by means of a special co-ordinating frame. The disc fits into a recess between two glass slides. It is rotated until the mark left by the compass needle is in line with a reference mark of the glass slide. Then when it is turned over, the angle and the direction of inclination may be read through the graduated slide on the opposite side. A series of circles represents angle of inclination, and the reading is made by simply noting the position of the mark with reference to these circles. Groups of radial lines represent compass azimuths and the position of the same mark with reference to these lines enables the reading of the direction to be as quickly made. The consecutive numbering of the discs makes it possible to determine the correct sequence of the readings if they are disarranged after being taken out of the instrument.

The operating mechanism is housed within a brass case. This case is entirely filled with a high-grade lubricating oil. At the bottom of the case is a spring-loaded balancing plunger, which maintains the pressure inside the case exactly the same as that outside and prevents any tendency of the pressure to collapse the instrument case or burst it, or to force mud into it.

Before going in the hole the instrument is tested under conditions simulating those of actual operation. It is set into a glass cylinder on a rotatable stand. The stand is rapidly rotated, then stopped. The operation of the instrument is watched and timed. Several discs are run through, and the instrument is tilted to various known angles in various known directions. Before transfer to its case, these discs may be checked to be certain that the instrument is operating perfectly in every way.

Test Always Made

Such a test assures that every part of the instrument is in working order and that the registration is accurate, and thus is a precaution which may save an extra round trip. Though every part of the instrument has been tested under every conceivable service condition, this test is always made before running in the hole to insure mainly against personal errors of operation, such as omitting to set the spring tension to the correct amount.

The instrument is placed in its bronze case which then is filled with special lubricant and installed in the drill stem, which is introduced into the well. The process of making a record is started by rotating the drill pipe above the speed for which the instrument is set for a few seconds, then stopping it and holding it stationary for about a minute.

When a second reading is to be taken the rotation of the pipe is simply speeded up again to the overspeed at which the instrument is set, stopped, and let stand another minute. Forty-five seconds is the exact time required to make a complete recording. The depth of each reading is recorded on the well log.

The Rieber instrument is to be manufactured and distributed under a special service arrangement under the direction of the Rieber Instrument Corp., Insurance Exchange Bldg., Los Angeles, Calif.

TO DEVELOP OIL PROPERTIES

Plans are being made by Missouri-Kansas Pipe Line Co. for more active development of its oil properties in western Kentucky, beginning February 15, B. R. Bay, vice president and general manager states.

"We have already brought in several good oil wells in Muhlenberg County," said Mr. Bay, "and our geologists have given favorable reports on other leases in the western section of Kentucky, particularly in Caldwell and Hopkins Counties."

While practically a new departure for the company, crude oil sold by Missouri-Kansas to the Ohio Oil Co. in one of the final months of 1929, amounted to approximately $15,000.

"This production should be greatly increased in the future," said Mr. Bay. "Primarily, Missouri-Kansas entered Kentucky to develop natural gas and this has been accomplished on a large scale. However, when oil was found on our leases, it was decided to sell this oil to the pipe line companies in the territory instead of closing up the wells."

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Beaumont, Tex.

The Annual Refinery Number

On March 6, 1930, The Oil and Gas Journal will publish its "Annual Refinery Number."

"The Annual Refinery Number" is the outstanding publication of the year for all those engaged in the Petroleum Refining Industry.

Executives, Engineers, Chemists, Superintendents, Sales Managers and all those primarily interested in the numerous phases of crude oil Refining will find a wealth of data of genuine value to them in "The Annual Refinery Number."

The issue will contain many papers written by outstanding technologists in addition to the features being prepared by The Oil and Gas Journal editorial staff.

As in previous years, "The Annual Refinery Number" will contain the Annual Survey of Petroleum Refineries in the United States.

The refinery Survey includes names of all executives and keymen as well as current data showing types, capacities and locations of all the refineries in the United States.

Every phase of the Petroleum Refining Industry will be described in detail in "The Annual Refinery Number."

As usual, the special "Annual Refinery Number" will be mailed to regular subscribers without additional cost to them.

The OIL and GAS JOURNAL

PRODUCING REFINING ENGINEERING MARKETING

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WILDCAT OPERATIONS IN OKLAHOMA

(Continued from Page 42)

Marion Oil's No. 1 Sanders, NW NE SW Sec. 10-9-18e ..Shut down 2,387 ft.
Sanboise Gas' No. 1 Unknown, SW NW SE Sec. 32-9-21e ..Shut down 2,100 ft.

HUGHES COUNTY

Wright et al's No. 1 Ott, SE SW Sec. 15-5-11 .....Rig.
Canady et al's No. 1 Kanard, NW SW Sec. 29-9-12 .....1,000,000 ft. gas 2,284-90 ft.; total depth 2,815 ft.; shut down.
Irwin et al's No. 1 Jones, SE NW Sec. 30-5-10 .....Rig on ground.

KINGFISHER COUNTY

Superior Oil Co.'s No. 1 Story, SE cor. Sec. 25-19-5w ....Fishing 6,285 ft.
Galt Brown's No. 1 Wolf, NW SE Sec. 6-16-7w .....Shut down 6,015 ft.

KIOWA COUNTY

Hyde et al's No. 1 Jones, SE cor. Sec. 23-3-18w .....Shut down 490 ft.
Merrick Oil Co.'s No. 1 Kelly, NW cor. SE Sec. 26-7-17w..Shut down 1,500 ft.

LEFLORE COUNTY

Red Bank Oil Co.'s No. 1 fee, SE SW NW Sec. 23-9-24...Total depth 5,440 ft.; 15,000,000 ft. gas; drlg. 5,488 ft.

LATTIMER COUNTY

Limestone O. & G. Co.'s No. 1 Shaw, NW cor. NE NW Sec. 23-5-18e .....Drlg. 1,550 ft.

LOGAN COUNTY

Currier's No. 1 Young, C SW NE SW Sec. 34-17-4w ....Rig.
Haley & Smith's No. 1 Guier, SE cor. SW Sec. 33-18-3w..Shut down 3,970 ft.

McINTOSH COUNTY

T. C. Young's No. 1 Derrison, Sec. 3-12-15 .....Shut down 710 ft.
Jennings Bros.' No. 1 Crabtree, NW SW NE Sec. 31-10-14 .....Shut down 3,500 ft.
Patterson and others' No. 1 Smith, SW cor. NW SE Sec. 32-9-16 .....Shot 240 qts. 5,446-5,559 ft.; shot went off up hole; fishing.

MUSKOGEE COUNTY

Mid-Western Oil Co.'s No. 1 Unknown, C NW SW Sec. 31-12-19 .....Location.
Sioux Oil Co.'s No. 1 Unknown, NW SE Sec. 21-11-19 ..Shut down 1,011 ft.

NOBLE COUNTY

Gypsy Oil Co.'s No. 1 Bergstrom, SE NE Sec. 28-22-1w ..Rig.
Peerless et al's No. 1 Wentz, NW SW Sec. 22-22-1 .....Drlg. 3,279-3,306 ft.; flowed 75 bbls. 24 hours.

OKFUSKEE COUNTY

Irwin et al's No. 1 Davis, SE NW Sec. 16-13-9 .....Rig.
Henry Oil Co.'s No. 1 Harjo, Sec. 36-12-9 .....Shut down 2,795 ft.
E. L. Robinson's No. 1 Rice, NW Sec. 2-10-9 .....Location.
Shepard et al's No. 1 Neveas, SE NW SW Sec. 3-12-10 ..Shut down 3,661 ft.

OKLAHOMA COUNTY

J. F. Cunniff, trustee's No. 1 Church Land, NE SW SE Sec. 17-12-4w .....Rig.
Magnolia and Ramsey's No. 1 Johnson, C NE SW Sec. 35-13-3w .....Drlg. 4,150 ft.
Ryan & Martin's No. 1 Lawton, NE NW Sec. 3-11-2w..Drlg. 3,985 ft.
Tom Slick Oil Co.'s No. 1 Martin, C NW NW Sec. 13-13-1w .....T. D. 6,966 ft.; water; recemented, shut down.
Hall & Briscoe's No. 1 Holmes, NE cor. SW SE Sec. 10-11-3w .....New hole; drlg. 3,095 ft.

OSAGE COUNTY

Kay Co. Gas' No. 1, C N half NE Sec. 28-24-4 .....Rig.
Continental Oil Co.'s No. 1, NW SE SE Sec. 24-24-5 ....Drlg. 540 ft.

PAWNEE COUNTY

Shaffer O. & R. Co.'s No. 1 Jones, SW NE Sec. 22-20-5..Location.
Cochran and others' No. 1 Green, NE cor. SW Sec. 15-23-5 .....Rig.

PITTSBURG COUNTY

Empire O. & R. Co.'s No. 1 Williams, C NE SE Sec. 33-7-16e .....Shut down 3,975 ft.
Kerr & Koy's No. 1 Hall, C NW NW Sec. 32-4-12 .....Shut down 3,502 ft.

POTTAWATOMIE COUNTY

Keister & Manning's No. 1 Rowlett, SW SE NE Sec. 30-8-4 .....Rigging up standard tools 4,254 ft.
Payne Drlg. Co.'s No. 1 Bullock, SE NE Sec. 22-6-3 ....Rigging up standard tools 3,932 ft.

ROGER MILLS COUNTY

Bucy & Stone's No. 1 Williams, C SW Sec. 23-12-24w ....Rig.
L. C. Hivick's No. 1 Davis, C NW NE Sec. 4-11-26w ....Shut down 2,769 ft.

SEMINOLE COUNTY

Superior Oil Co.'s No. 1 Morgan, SE cor. Sec. 19-6-6 ....Rig.
Magnolia's No. 1 Webster, NE SE NW Sec. 31-6-8 .....Drlg. 2,420 ft.
Prairie's No. 1 Mingo, SE NE Sec. 25-6-5 .....Wilcox 4,307-20 ft.; water; shut down.
Prairie's O. & G. Co.'s No. 1 Harjo, NE SW NE Sec. 25-6-7 .....Wilcox 4,272-76 ft.; water; shut down.
Sunray Oil Co.'s No. 1 Sunday, NW SE Sec. 25-5-5 .....Location.

WOODS COUNTY

Peerless O. & G. Co.'s No. 1 Crowell, C NW NE Sec. 23-28-16w .....Drlg. 2,945 ft.
S. K. Miller's No. 1 Copenhavers, NW cor. NW Sec. 18-24-13w .....Rigged up and shut down.
Gypsy-Prairie and others' No. 1 Thompson, SE cor. SW Sec. 10-25-15w .....Fishing 6,104 ft.
Sinclair Oil & Gas Co.'s No. 1 Showwalter, C SW SW Sec. 33-27-16w .....Drlg. 6,322 ft.

WOODWARD COUNTY

Farrond et al's No. 1 Unknown, SE cor. SW SE Sec. 2-23-17w .....Shut down 1,387 ft.
Prairie Oil & Gas and others' No. 1 Wilber, NE cor. NW Sec. 23-23-17w .....Drlg. 6,025 ft.
Billy's Oil Co.'s No. 1 Watt, C SE Sec. 9-23-20w .....Drlg. 5,240 ft.
Burgoyne Bros.' No. 1 Merkins, SW cor. SE NE Sec. 15-21-19w .....Shut down 1,910 ft.

SOUTHERN OKLAHOMA

ATOKA COUNTY

J. W. Ernest and Bryant's No. 1 Unknown, NW cor. Sec. 6-1-14 .....Shut down 800 ft.
Bryant-Croxton's No. 1 Mason, NW NE NW Sec. 4-1s-14. Drlg. 1,530 ft.
Bookshire's No. 1 Guinn, NW cor. Sec. 16-3s-10 .....Shut down 100 ft.

BRYAN COUNTY

Marshall's No. 2 fee, C SW SE NW Sec. 26-5s-7 .....Shut down; 6-in. csg. 265 ft.
Yale Oil Syndicate's No. 1 Craige, C NW NE Sec. 36-9s-9e .....Shut down 2,025 ft.

CARTER COUNTY

Campen-Lasater Co.'s No. 1 Anderson, NE cor. SE NE SE Sec. 32-4s-2 .....Shut down 1,980 ft.

CHOCTAW COUNTY

Choctaw Petroleum Co.'s No. 1 Wilson, SW cor. SW Sec. 15-6-19e .....Shut down 1,346 ft.

COTTON COUNTY

American Ref. Co.'s No. 1 Miller, SE SW Sec. 9-5s-12w..Shut down 2,085 ft.
T. Medlin's No. 1 Johns, SW SE Sec. 8-2s-9w .....Shut down 1,260 ft.

MARSHALL COUNTY

Golden Rule Oil Co.'s No. 1 Reeves-Gray, C NW SE NE Sec. 19-6s-6 .....Shut down 100 ft.

McCURTAIN COUNTY

Utopia Pet. Co.'s No. 1 Unknown, SE NW Sec. 14-9s-25..Location.
Milton et al's No. 1 Vase, SW NW Sec. 26-6s-21 .....Drlg. 1,750 ft.

STEPHENS COUNTY

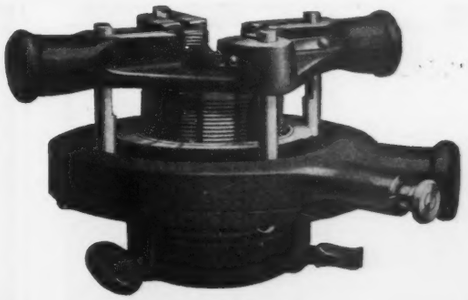
Wirt Franklin Pet. Corp.'s No. 1 McPhail, NW SE Sec. 1-2s-7w .....Rig.
Smythe et al's No. 1 Johnson, NE cor. Sec. 30-2-8w ....Shut down 2,476-87 ft.

TILLMAN COUNTY

Allen Bros.' No. 1 Howell, SW NE Sec. 13-1-17w .....Shut down 715 ft.
Nance et al's No. 1 Massie, NE NW Sec. 36-1s-6w .....Location.
Landfair and others' No. 1 Smith, SE SW SE Sec. 6-2s-16w .....Shut down 2,535 ft.

OKLAHOMA PANHANDLE

Skaer's No. 1 Hitch, NW cor. Sec. 25-1-15e .....Abandoned 250 ft.



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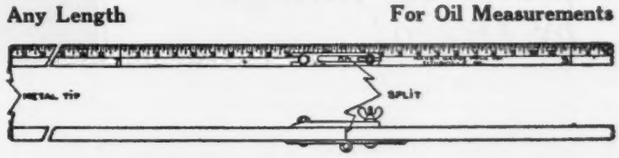

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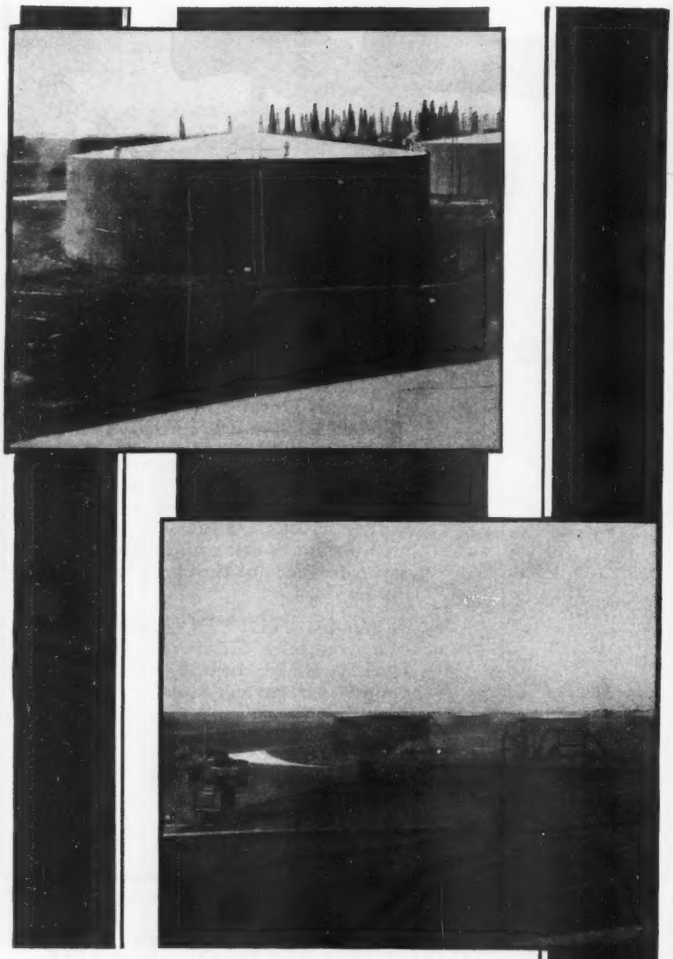

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NEW LOCATIONS IN TEXAS PANHANDLE AND NORTH AND WEST TEXAS FIELDS

TEXAS PANHANDLE

Week ending January 22

Gray County

Dixon Creek Oil Co.'s No. 1 W. W. Harrah, 330 feet south and east of the NW cor. of the SE of the NE of Section 150, Block 3, I.&G.N.

Hutchinson County

Barnsdall Oil Co.'s No. 4 J. E. Pritchard-A, at the C of the SW of the NW of Section 3, Block B-4, D.&S.E. Midwest Exploration Co.'s No. 1 H. C. Pitcher and others-B, 330 feet north and west of the SE cor. of the W half of the SW of Section 19, Block M-21, T.C.R.R.

NORTH CENTRAL AND WEST TEXAS

Week ending January 22

Archer County

Perkins-Cullum and Navarro Oil Co.'s No. 1 L. F. Wilson, 650 feet north and 3,100 feet west of the SE cor. of Section 112, A.T.N.C.L. W. D. Cline and others' No. 2 L. M. Hayter, 782 feet north and 1,718 feet east of the SW cor. of the south 40 acres of the W half of Section 2,423, T.E.&L. Consolidated Oil Co. and Grisham's No. 1 H. F. Harmel, 150 feet south and west of the NE cor. of the west 30 acres of the north 50 acres of the H. F. Harmel 210-acre tract out of Section 2,490, T.E.&L. F. P. Cullum and others' No. 5 Falls County School Land, 3,104 feet north and 990 feet west of the SE cor. of Section 9, Falls County School Land, A-130.

Golding & Cochran's No. 3 H. F. Harmel, 150 feet north and west of the SE cor. of the W half of Section 25, G. P. Meade Subdivision, L. M. Pasture. Goldsmith & King Royalty Co.'s No. 4 O. Deitrich, 150 feet north and east of the SW cor. of their 11-acre lease out of Section 4, B.B.B.&C., A-1,700. Same company's No. 5 O. Deitrich, 150 feet north and 450 feet west of the SE cor. of their 11-acre lease out of Section 4, B.B.B.&C., A-1,700. Pandem Oil Corp.'s No. 5 J. A. Young-D, 150 feet north and 450 feet west of the SE cor. of the N half of the SE of Section 2,426, T.E.&L. Perkins & Cullum's No. 1 J. T. Richardson-A, 450 feet south and 150 feet east of the most northerly NW cor. of Section 1, E.L.&R.R., A-687. The Texas Company's No. 1 W. H. Portwood, 150 feet south and west of the NE cor. of Section 2,412, T.E.&L. The Texas Company's No. 1 W. O. Wright, 150 feet south and 1,054 feet west of the NE cor. of the north 50 acres of Section 16, G. P. Meade Subdivision, L. M. Pasture.

Baylor County

Consolidated Oil Co. and others' No. 11 W. H. Portwood, 504 feet south and 464 feet east of the NW cor. of the SW of Section 1,281, T.E.&L. Perkins & Cullum's No. 1 W. D. Howe, 317 feet south and 150 feet west of the NE cor. of the W half of the SE of Section 2,-452, T.E.&L.

Brown County

Darby Oil Co.'s No. 7 D. Belvin, 150 feet south and 440 feet east of the NW cor. of the D. Belvin 40-acre tract out of Section 42, H.T.&B.

A. B. Gordon and others' No. 7 S. B. Cannon-A, 500 feet north and west of the SE cor. of their lease out of the W. Ahrenbeck & Brother Survey No. 3, A-20. S. B. Owens, Inc.'s No. 5 J. W. Whiteside, 1,050 feet south and 720 feet east of the NW cor. of the J. W. Whiteside 238-acre tract out of the C. B. Banister Survey No. 627. S. B. Owens, Inc. and others' No. 9 S. B. Cannon, 850 feet north and 150 feet east of the SW cor. of their lease out of the W. Ahrenbeck & Brother Survey No. 3, A-20. E. L. Smith Oil Co.'s No. 32 L. A. George, 575 feet north and 150 feet west of the most northerly SE cor. of their lease out of Section 42, H.T.&B. Woodley Petroleum Corp. and others' No. 1 E. P. and W. H. Kilgore, 150 feet south and west of the NE cor. of the west 75 acres of the north 125 acres of the heirs N. B. Mitchell Survey No. 153.

Callahan County

Humble Oil & Refining Co.'s No. 1 I. N. Jackson-D, 150 feet north and 3,450 feet west of the SE cor. of Section 21, E.T.R.R. J. Kleiner and others' No. 1 T. Windham, 1,695 feet south and 300 feet east of the NW cor. of Section 154, G.H.&H. Mook-Texas Oil Co.'s No. 1 W. T. Wilson, 150 feet south and west of the NE cor. of the east 24 acres of the W half of Section 83, Comal County School Land. Osage Oil Corp.'s No. 1 A. Cutbirth, 660 feet south and 3,300 feet west of the NE cor. of Section 8, T.&N.O. Prairie Oil & Gas Co.'s No. 1 Seale estate, 1,700 feet south and 200 feet west of the NW cor. of the W. H. Johnson Survey No. 2 and located in Section 5, T.&N.O.

Coleman County

L. Smith's No. 11 J. P. Morris, 126 feet south and 3,170 feet west of the NE cor. of the J. H. Wood Survey No. 483. Texas American Syndicate's No. 1 W. Mathews, 705 feet south and 681 feet east of the NW cor. of Section 4, San Augustine University No. 519. Continental Oil Co. and others' No. 14 M. T. Overall, 200 feet north and 950 feet west of the SE cor. of the J. H. Barkley Survey No. 701.

Cooke County

Fain-McGaha Oil Corp.'s No. 1 M. Dillon, 225 feet south and 150 feet east of the NW cor. of the west 100 acres of the W. A. Chapman Survey, A-277. Kewanee Oil & Gas Co.'s No. 10 R. J. Timmis-B, 2,280 feet south and 450 feet east of the NW cor. of their 104-acre lease "B" out of the E.T.R.R. Survey No. 5, A-363.

Eastland County

Dorothy Oil Co. and others' No. 1 B. L. Hargus, 150 feet south and 330 feet west of the NE cor. of Section 2, Block 6, E.T.R.R. Hoffman & Page Co.'s No. 4 O. E. Lyerla, 150 feet south and 160 feet east of the NW cor. of the NE of the SW of Section 27, Block 2, H.& T.C. J. E. Lewis & Co.'s No. 4 M. E. Holcomb and others, 1,150 feet south and 750 feet east of the NW cor. of the SW of Section 1, Block 4, H.&T.C. J. L. Elliott's No. 1 P. Martin, 632 feet south and 491 feet east of the NW cor. of the E half of Section 52, Block 4, H.&T.C. Lone Star Gas Co.'s No. 1 C. H. Fee, 660 feet south and east of the NW cor. of the C. H. Fee 95-acre tract out of Section 80, Block 4, H.&T.C.

Ector County

R. R. Penn and others' No. 1 L. Goodman and others, 2,640 feet north and 330 feet west of the SE cor. of Section 27, Block 44, T-1-N, T.&P.

Howard County

McGinley & Seigler's No. 1 H. Hyman-B, 330 feet south and west of the NE cor. of the SW of Section 89, Block 29, W.&N.W.R.R. McGinley & Seigler's No. 1 H. Hyman-C, 330 feet north and 990 feet west of the SE cor. of the SE of Section 93, Block 29, W.&N.W.R.R.

Loving County

Lockhart & Co.'s No. 5 W. W. Hubbard, 1,650 feet southwest of the northeast line and 330 feet southeast of the northwest line of Section 83, Block 33, H.&T.C.

Jack County

Hopkins and others' No. 1 J. C. Riggs, 300 feet north and 375 feet east of the SW cor. of the W. G. Matthews Survey, A-392. L. C. Harper's No. 6 W. R. Ezell, 1,500 feet north and 150 feet east of the SW cor. of the W. R. Ezell 102-acre tract out of the I. Hughson Survey, A-256. L. C. Harper's No. 7 W. R. Ezell, 200 feet south and 150 feet east of the NW cor. of the west 42 acres of the W. R. Ezell tract out of the I. Hughson Survey, A-256. Republic Production Co.'s No. 1 A. E. Enlow, 200 feet north and east of the SW cor. of the east 60 acres of the A. E. Enlow 100-acre tract out of the I. Hughson Survey, A-256. Republic Production Co.'s No. 3 W. R. Ezell, 1,669 feet north and 320 feet west of the SE cor. of the W. R. Ezell tract out of the I. Hughson Sur-

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vey, A-256. Shaw Oil Co.'s No. 7 J. M. and W. E. Box, 200 feet north and west of the NW cor of the W. R. Ezell tract and located on the J. M. and W. E. Box tract out of the Hughson Survey, A-256.

Palo Pinto County

L. Peters' No. 1 F. Riebe, 300 feet south and east of the NW cor. of the NE of the SE of Section 58, Block 3, T.&P. Texas Pacific Coal & Oil Co.'s No. 165 S. J. Stuart and others, 1,630 feet south and 2,835 feet west of the NE cor. of Section 71, Block 4, T.&P.

Pecos County

Gulf Production Co.'s No. 23 M. A. Smith and others, trustee-A, 1,650 feet north and 2,970 feet west of the SE cor. of Section 28, Block 194, G.C.&S.F.R.R. Cranfill & Reynolds' No. 1 J. Masterson-B, 2,640 feet northwest of the southeast line and 1,470 feet northeast of the southwest line of Section 105, Block 10, H.&G.N. Dixie Oil Co.'s No. 1 Mrs. F. E. Forborg, 150 feet north and east of the SW cor. of the E half of Section 539, Arnold & Barrett Survey, A-3. Humble Oil & Refining Co.'s No. 2 J. C. and D. H. Cunningham, 2,640 feet south and 330 feet east of the NW cor. of Section 48, Block 11, H.&G.N. McMan Oil & Gas Co.'s No. 11 M. A. Smith-C, 2,937 feet north and 1,090 feet east of the SW cor. of Section 25, Block 194, G.C.&S.F. McMan Oil & Gas Co.'s No. 12 M. A. Smith-C, 1,400 feet north and 990 feet west of the SE cor. of Section 25, Block 194, G.C.&S.F.

Shackelford County

Carter Development Co.'s No. 2-A J. H. Nail, at the C of the NE of the NW of Section 52, Block 10, E.T.R.R. Cranfill & Reynolds' No. 3 J. B. Matthews, 150 feet north and west of the SE cor. of the SW of the NE of Section 32, Block 10, E.T.R.R. Grisham-Hunter Corp.'s No. 6 W. Y. and R. A. Davis, 500 feet north and west of the SE cor. of the NW of Section 20, Block 13, T.&P. Humble Oil & Refining Co.'s No. 1 L. Ackers, 3,400 feet north and 1,500 feet west of the SE cor. of Section 26, Block 13, T.&P. W. G. Klinger and others' No. 2 W. E. Muse, 150 feet south and 450 feet west of the NE cor. of the SE of Section 1, Blind Asylum Land. Simms Petroleum Co.'s No. 2 H. A. Lones-A, 200 feet north and 1,800 feet west of the SE cor. of Section 64, Block 11, T.&P.

Stephens County

Arrowhead Oil Co.'s No. 5 H. S. Post, 300 feet north and east of the SW cor. of the SE of Section 32, Block 6, T.&P.

Upton County

Texas Pacific Coal & Oil Co.'s No. 1 J. Belcher, 1,320 feet south and 2,310 feet east of the NW cor. of Section 10, Block 4½, G.C.&S.F.

Young County

The Bonner Co.'s No. 4 J. W. Davis, 150 feet north and west of the SE cor. of the south 20 acres of the west 60 acres of the north 160 acres of Section 1,395, T.E.&L. The Bonner Co.'s No. 6 J. W. Davis, 150 feet north and 477 feet west of the SE cor. of the west 60 acres of the S half of Section 1,395, T.E.&L. Dr. W. M. Cooke's No. 1 E. A. Edwards, 450 feet south and 150 feet west of the NE cor. of the E. A. Edwards 100-acre tract out of Section 3,401, T. E.&L. F. Darr's No. 1 A. T. Dahse, 900 feet north and 150 feet west of the SE cor. of the south 24 acres of the east 48 acres of the A. T. Dahse 97.2-acre tract and located in Section 18, Crawford Subdivision. Madden & Hunt's No. 2 O. Deitrich, 150 feet south and 450 feet east of the NW cor. of the north 15 acres of the O. Deitrich 150-acre tract out of the G. W. Stell Survey, A-256. Martin & Cochran's No. 1 Mrs. C. A. Slater, 1,800 feet south and 150 feet east of the NW cor. of the Mrs. C. A. Slater 120-acre tract out of Section 632, T.E.&L. John Menke's No. 1 H. E. Smith and others, 150 feet south and west of the NE cor. of the south 40 acres of the west 80 acres of the N half of Section 73, T.E.&L. Panhandle Refining Co.'s No. 5 N. Prideaux-D, 2,140 feet north and 1,150 feet east of the SW cor. of the I.&G.N. Survey, A-1,324. Same company's No. 6 Prideaux-D, 1,840 feet north and 1,750 feet east of the SW cor. of the I.&G.N. Survey, A-1,324. Same company's No. 7 Prideaux-D, 1,840 feet north and 1,450 feet east of the SW cor. of the I.&G.N. Survey, A-1,324. Same company's No. 8 Prideaux-D, 1,840 feet north and 2,050 feet east of the SW cor. of the I.&G.N. Survey, A-1,324.

Perkins & Cullum's No. 6 E. Deitrich, 1,350 feet south and 150 feet east of the NW cor. of their 45-acre lease out of the G. W. Stell Survey, A-256. Petroleum Producers Co. and Madden's No. 2 O. Deitrich, 150 feet south and 750 feet east of the NW cor. of the south 60 acres of the north 75 acres of the O. Deitrich 150-acre tract out of the G. W. Stell Survey, A-256. Stump & Heydrick's No. 3 J. B. Daniels, 150 feet north and 750 feet west of the SE cor. of the south 40 acres of the E half of Section 164, T.E.&L. C. C. Williams and others' No. 1 C. J. Taack, 150 feet south and west of the NE cor. of the W half of the SW of Section 263, T. E.&L. Wo-Mac Oil Co.'s No. 1 Stephens Roach Co., 1,200 feet north and 450 feet east of the SW cor. of the Stephens Roach Co. tract out of Section 1, B.B. B.&C., A-35. Wo-Mac Oil Co.'s No. 2 Stephens Roach Co., 1,200 feet north and 790 feet east of the SW cor. of the Stephens Roach Co. tract out of Section 1, B.B.B.&C., A-35. Wootten & Reed's No. 5 A. C. Casey, 150 feet south and 900 feet east of the NW cor. of Section 1,486, T.E.&L. Baker & Pardee's No. 2 H. M. Donnell, 200 feet north and 1,260 feet east of the SW cor. of the S.P.R.R. Survey, A-1,830. Baker & Pardee's No. 3 H. M. Donnell, 200 feet north and 696 feet east of the SW cor. of the S.P.R.R. Survey, A-1,830. Flultz & Kay's No. 2 J. Kisinger, 1,300 feet northwest of the northwest line of the W. J. Orrick Survey, A-217, and 2,800 feet southwest of the southwest line of Section 3, B.B. B.&C., A-27, and located in the John Conner Survey, A-57, being 160 feet north and west of the SE cor. of their 40-acre lease.

Wichita County

Kisk Oil Co.'s No. 1 J. L. and T. J. Waggoner, 150 feet north and 1,797 feet east of the SW cor. of the south 40 acres of the west 160 acres of the M. A. Willis Survey, A-547. Magnolia Petroleum Co.'s No. 3 Allen & Kemp, 330 feet north and 336 feet west of the SE cor. of the south 20 acres of Lot 8, Block 27, K.W.V.I. The Texas Company's No. 373 W. T. Waggoner, 2,800 feet north and 460 feet west of the SW cor. of Section 13, H.T.&B., A-137, and located in Section 148, H.T.&C., A-784.

Corrections

Baylor County—Consolidated Oil Co. and others' No. 10 W. H. Portwood, 554 feet north and 750 feet west of the SE cor. of the SW of Section 1,281, T.E.&L.

Young County—Panhandle Refining Co.'s No. 4 N. Prideaux-D, 2,440 feet north and 1,417 feet east of the SW cor. of the I.&G.N. Survey, A-1,324.

CENTRAL WEST FIELDS

(Continued from Page 58)

tion on the Nancy S. Smith farm, Section 3, and is drilling No. 2.

In Lake County, John Sherwin is drilling on his own farm, Section 4, Willoughby Township, near the town of Willoughby.

In Guernsey County, Wheeling Township, the East Ohio Gas Co.'s No. 1 on the A. A. Berlin farm, Section 1, is reported at 60 bbls. initial at 3,680 feet. Same company's No. 7 C. and A. Gray farm, Section 11, same township, showed an initial of 50 bbls. from 3,526-30 feet, total depth 3,532 feet. Ohio Fuel Gas Co. made a location for No. 3 on the W. J. Alloway farm, Section 1, and the North Salem Oil & Gas Co. is drilling No. 6 C. and A. Gray farm, Section 11, same township.

Pike County

In Pike County, Seal Township, Beasley and others report a light gas well on the George Armentrout farm, Section 32.

In Harrison County, Nottingham Township, A. C. Phillips and Son's test on the Jesse M. Keller farm, Section 6,

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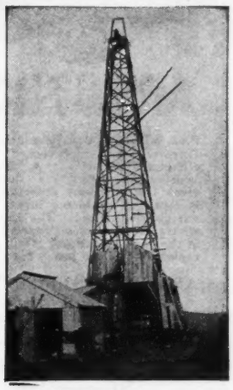

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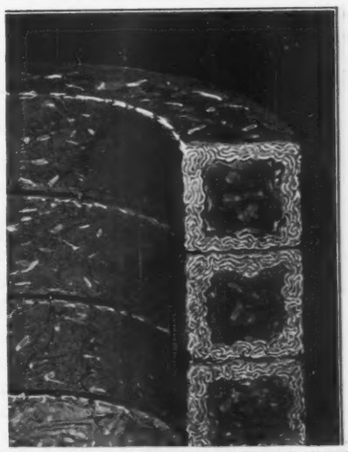

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was dry in the lower Cow Run sand from 615 to 625 feet.

In Morgan County, Marion Township, Williams Brothers have a very nice gas well in No. 6 on the Arthur T. Smith farm, Lot 12, in the Salt sand from 850 to 890 feet. The Kemrow Co. made a location for No. 12 on the Edmond Parker farm, same township. In Malta Township, the Ohio Fuel Gas Co. has a fair gas well in No. 1-4,932 on the W. H. Coler, Section 26, in the lower Berea from 1,564-88 feet, total depth 1,592 feet. Same company made a location for No. 2-4,999 on the W. B. Miller farm, Section 16, Penn Township, and drilling No. 2-4,998 on the same farm. In York Township, the Pure Oil Co.'s No. 2 on the Jesse G. Eppley farm, Section 28, is reported at 15 bbls. initial from the upper Berea sand from 1,307-37 feet.

In Knox County, Jackson Township, the Pure Oil Co.'s test on the Joseph Crider, Section 9, is a duster at 3,083 feet. In Chester Township, Meigs County, Frick & Barnaby's No. 9 Wesley Genheimer, Section 21, pumped 4 bbls. initial.

INDIANA

Only two completions were reported from the Indiana Field, both being in the southwestern part of the state. L. G. Gee and others drilled in No. 3 well, 225 feet from the north line and 500 from the east line of the J. M. Peek farm, NE, Section 28, Veale Township, Daviess County, with an initial production of 10 bbls. Sand was found from 1,322-35 feet, total depth 1,345 feet.

The other completion was C. L. Diver's test in the southeast corner of the Rubert Walton, SE, Section 14, Logan Township, Pike County. Top of sand in this well was found at 1,355 feet, first oil showing at 1,394 feet and drilled to the Brown sand at a total depth of 1,406 feet. The hole was plugged back to the Oakland City sand at 1,399 feet and produced 4 bbls. under pump. In Clay Township, same county, Lee & Cox, trustee, are drilling No. 2 on the Charles McAtee farm, Location 146. Mahutska Oil Co. is drilling a second test on the Ford & Hill farm, Section 31, and F. B. Hillis and others are drilling on the N. Robesheid farm, Section 31, same township.

Indiana Oil & Gas Corp. is drilling on the Ben Buck, Section 10, Barton Township, Gibson County, and is also drilling on the Perry Colvin farm, Section 6, Washington Township, same county.

ILLINOIS

The Dupo Field in Sugar Loaf Township, St. Clair County, remains the busy spot in Illinois and has proved a great shallow producing field. The Ohio Oil Co.'s No. 3 well, 160 feet from the north line and 660 feet from the west line of the I. S. Gaskill farm, NW, Section 34, Sugar Loaf Township, produced an initial of 60 bbls. from 631 to 663 feet. Hans Wolf's No. 2 on the Oliver Anderlan, Section 33, pumped 8 bbls. initial. Carney and others' No. 1 on the Baptist Church lot, Section 21, was spoiled by a shot exploding at a depth of 200 feet and the hole was abandoned. About 25 strings of tools are working in the Dupo Field.

In Monroe County, Abbott & Connelly's No. 1 on the Demint & Hardy farm, in Location 4, Section 36, is reported to have produced an initial of 10 bbls.

In Collinsville Township, Madison County, Samuel Rayburn, is drilling a wildcat in Sections 7 and 8.

In Wabash County, Wabash Township, Joe S. Young, Jr., and others' No. 3 in the southwest corner of the Winnie Sparks, SE, Section 26, pumped 5 bbls. from the Biehl sand from 1,376-85 feet. Foreman & Miller are drilling on the H. Robinson farm, Section 15, same township.

Arkansas Fuel Oil Co. got a duster 500 feet from the north line and 660 feet from the east line of the John Vaughn, SW, Section 33, Prairie Township, Crawford County, at 865 feet. Porterville Oil Co. is drilling No. 2 on the G. G. Granby, Section 36, same township.

Missouri Test

H. McCurdy is drilling a wildcat on the Benjamine & Barnhoff property, in St. Louis County, Missouri.

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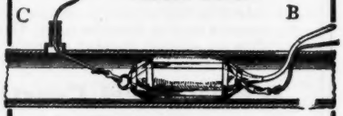

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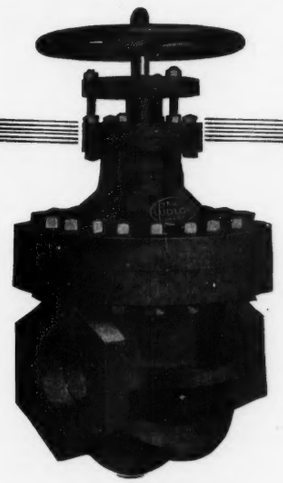

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Oklahoma-Kansas and Eastern Pipe Line Report

OKLAHOMA-KANSAS PIPE LINE STATEMENT FOR NOVEMBER, 1929

Runs

Company—	Month (bbls.)	Dy. av. (bbls.)
Prairie P. L. Co.*	4,620,000	154,000
Gulf P. L. Co.	1,748,975	58,299
Texas P. L. Co.	756,387	25,213
Magnolia P. L. Co.	1,630,495	54,350
Empire P. L. Co.	1,625,698	54,190
Cosden P. L. Co.	798,835	26,628
Sinclair P. L. Co.*	2,820,000	94,000
Oklahoma P. L. Co.	3,092,396	103,080
Other lines*	5,620,000	184,000
Total November	22,612,786	753,760
Total October	24,266,273	782,783
Difference	1,653,487	29,023

Shipments

Prairie P. L. Co.†	6,192,204	206,407
Gulf P. L. Co.	1,892,038	63,068
Texas P. L. Co.	1,277,071	42,569
Magnolia Pet. Co.	2,247,152	74,905
Empire P. L. Co.	1,441,860	48,062
Cosden P. L. Co.	859,728	28,857
Sinclair P. L. Co.†	3,458,090	115,270
Oklahoma P. L. Co.	3,228,946	107,632
Other lines*	6,210,000	207,000
Total November	26,807,089	893,570
Total October	27,633,003	891,388
Difference	825,914	2,182

Stocks

Prairie Oil & Gas Co.*	38,133,700
Gulf Pipe Line and Gypsy Oil Co.	10,057,895
The Texas Company	6,982,264
Magnolia Petroleum Co.	8,000,426
Empire Oil & Refining Co.	5,751,909
Mid-Continent Petroleum Corp.	3,600,903
Sinclair Crude Oil Pur. Co.	20,114,000
Oklahoma Pipe Line Co.	3,718,953
Carter Oil Co.	9,421,386
Other companies	25,574,000
Total November	131,355,426
Total October	133,042,778
Difference	1,687,352

*Estimated. †Prairie and Sinclair shipments include Texas oil.

EASTERN PIPE LINE REPORT FOR MONTH OF DECEMBER

Runs From Wells

In the following table will be found the regular receipts from wells by various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky, Indiana and Michigan for November and December:

	Nov. 1929	Dec. 1929
Nat. Transit	426,302.38	451,222.47
S. W. Pa. P. L.	82,952.71	86,078.43
Eureka P. L.	357,808.48	364,779.55
Buckeye P. L. (Macksburg)	334,853.69	352,447.91
Buckeye P. L. (Cleveland)	10,941.76	9,993.96
Buckeye P. L. (Lima, etc.)	94,141.89	90,018.07
Indiana P. L.	5,047.91	4,720.28
Cumberland P. L.	176,386.64	189,528.30
N. Y. Transit	31,674.21	34,104.38
Tidewater P. L.	23,927.23	25,495.45
Pure Oil	296,627.99	277,181.96
Paragon Dev.	11,938.81	11,059.01
Stoll Oil Ref.	4,324.62	4,362.88
Bradford Trans.	387,990.83	410,395.25
Total	2,244,919.15	2,311,387.90
Daily average	74,830.64	74,560.90

Note—Paragon Refining Co. had other receipts of 172,635.39 bbls. Paragon Development had other receipts of 389.97 bbls. Indian Refining Co. had other receipts of 450,142.36 bbls.

Petroleum Deliveries

The following tables exhibit the shipments or regular deliveries of various pipe lines in New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana for November and December:

	Nov. 1929	Dec. 1929
Nat. Transit	610,866.22	596,904.16
S. W. Pa. P. L.	335,147.92	328,907.79
Eureka P. L.	241,823.95	217,339.67
Buckeye P. L. (Macksburg)	200,936.77	209,875.38
Buckeye P. L. (Cleveland)	1,694.86	1,700.86
Buckeye P. L. (Lima, etc.)	1,293,017.06	895,636.25
Indiana P. L.	1,380,193.50	1,426,181.84
Cumberland P. L.	185,762.53	222,397.86
Southern P. L.	63,391.67	65,068.35
N. Y. Transit	265,488.60	164,584.79
Northern P. L.	173,230.28	201,259.03
Tidewater P. L.	324,984.88	510,737.25
Pure Oil	307,123.47	281,593.22
Paragon Ref.	192,159.25	172,635.39
Paragon Dev.	12,438.47	10,374.82
Bradford Tran.	494,038.59	468,781.60
Total	6,082,298.02	5,773,978.26
Daily average	202,743.27	186,257.36

Indian Refining Co. reported other deliveries of 428,638.08 bbls.

Gross Stocks

The gross stocks held by various pipe lines in the oil producing sections of New York, Pennsylvania, West Virginia, Ohio, Indiana and Kentucky and Indiana at the close of November and December:

	Nov. 1929	Dec. 1929
Nat. Transit	725,641.66	703,855.97
S. W. Pa. P. L.	526,381.77	531,541.47
Eureka P. L.	1,397,286.60	1,514,703.17
Buckeye P. L. (Macksburg)	413,588.69	476,862.16
Buckeye P. L. (Cleveland)	74,272.48	70,466.79
Buckeye P. L. (Lima, etc.)	3,181,309.11	4,286,296.85
Indiana P. L.	716,629.97	652,701.92
Cumberland P. L.	552,617.51	523,373.23
Southern P. L.	308,180.02	323,184.71
N. Y. Transit	141,455.63	216,820.01
Northern P. L.	346,327.62	437,683.50
Tidewater P. L.	1,012,222.37	868,271.09
Pure Oil	20,999.86	22,924.46
Paragon Ref.	25,402.17	31,470.68
Indian Ref.	.....	156,562.07
Paragon Dev.	4,736.09	6,037.00
Tuscarora	267,510.68	267,197.45
Brad. Trans.	159,975.37	164,000.93
Total	9,868,537.60	11,253,953.46
Increase	427,436.22	1,385,415.86

Grades of Oil

The following table shows the amount of the different grades of oil held by the Eastern Pipe Lines at the close of November and December showing gross stocks of the above fields:

	Nov. 1929	Dec. 1929
Pennsylvania	3,270,041.21	3,454,908.10
Lima	567,411.45	628,606.65
Kentucky	607,043.92	625,239.17
Mid-Continent	4,283,691.69	6,488,845.03
Illinois	283,720.25	44,576.48
Michigan	.....	11,778.03
Total	9,011,908.52	11,253,953.46

Daily Average Runs

The following table shows the daily average runs of the Pennsylvania, Lima and Kentucky oil fields for the past four years:

	1926	1927	1928	1929
January	55,630	56,209	52,904	51,749
February	60,394	61,298	57,008	51,833
March	61,644	63,247	57,485	54,252
April	63,019	60,927	56,812	58,444
May	60,580	60,284	62,067	59,902
June	61,121	62,757	58,230	58,833
July	63,206	58,674	57,144	66,087
August	61,815	60,870	57,745	66,687
September	64,639	60,285	53,487	67,315
October	161,132	147,080	58,100	76,093
November	67,774	57,275	53,865	74,831
December	58,755	53,089	52,025	74,561

Daily Average Shipments

The following table gives daily average shipments from the Pennsylvania, Lima and other fields for the past four years:

	1926	1927	1928	1929
January	156,056	141,227	146,465	165,721
February	159,488	138,534	167,368	159,387
March	150,239	133,777	158,883	161,474
April	152,374	140,227	172,935	169,737
May	160,998	144,594	180,559	184,281
June	160,267	149,772	188,024	185,404
July	160,045	151,850	189,470	194,763
August	151,929	188,653	192,853	184,946
September	158,915	144,213	194,138	201,214
October	161,132	147,036	176,000	191,367
November	172,608	150,975	176,898	202,743
December	136,428	144,504	173,572	186,257

Gross Stocks

In the following table will be found the gross stocks of the various lines of the Pennsylvania, Lima and Kentucky oil fields, including oil received from other lines at the close of each month for the past three years:

	1927	1928	1929
January	9,718,008	12,276,710	7,596,564
February	10,119,162	12,180,419	8,738,835
March	10,794,044	12,239,725	9,002,058
April	11,112,295	11,740,125	8,978,172
May	11,359,381	11,602,468	8,903,560
June	11,493,673	11,287,678	8,921,275
July	11,458,128	10,819,331	9,211,595
August	11,989,115	10,236,743	9,440,643
September	12,212,716	9,660,910	9,443,067
October	12,047,661	9,229,709	9,441,101
November	11,939,740	8,366,553	9,868,538
December	12,340,297	7,539,555	11,253,953

Franklin Pipe Co.

The following table exhibits the condition of the Franklin Pipe Line at the close of business for the months named and not counted in the stocks and averages reported above:

	Runs	Shipments	Stocks
1928—			
November	2,663.53	788.47	19,426.99
December	3,053.60	3,167.53	19,426.99
1929—			
January	2,099.90	.....	19,313.06
February	2,469.47	6,873.20	17,009.23
March	3,330.82	3,595.01	16,745.04
April	4,864.07	4,243.59	17,365.52
May	2,688.59	2,455.54	17,598.57
July	2,947.62	3,329.35	4,503.48
August	2,742.72	2,889.47	4,356.74
September	2,925.71	2,897.34	4,385.11
October	3,083.59	1,754.94	5,713.76

The Illinois Field

The amount of Illinois oil run by the Tidewater Pipe Co. in December was 25,495.45 bbls. Deliveries were 116,809.60. Adding these figures to those of the Illinois Pipe Line Co. makes the runs and deliveries as follows:

	Runs	Deliveries
1930—		
January	566,676.97	608,326.86
1929—		
January	570,727.38	545,084.66
February	517,330.17	503,387.70
March	728,319.67	586,049.60
April	515,374.27	654,297.96
May	608,981.60	673,812.83
June	568,454.70	818,845.97
July	611,106.79	828,159.44
August	625,351.99	746,425.06
September	582,457.66	669,947.72
October	622,302.83	558,558.68
November	565,108.75	427,064.63

Tidewater Pipe Co., Ltd., also delivered in December 99,884.13 bbls. Oklahoma oil.

AVERAGE DAILY RECEIPTS OF CALIFORNIA OIL AT ATLANTIC AND GULF COAST PORTS

Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
March	19,903	968	31,258	18,581	7,355	78,065	.....	.....	.....	.....	.....	78,065
April	16,667	....	32,333	13,233	2,234	64,467	.....	.....	.....	.....	7,333	65,200
May	16,226	2,416	31,326	10,806	2,129	62,903	.....	.....	.....	.....	....	62,903
June	14,866	2,167	23,100	10,300	6,100	57,533	.....	.....	.....	.....	.....	57,533
July	15,387	4,806	34,290	19,388	2,452	76,323	.....	.....	.....	.....	4,161	80,484
August	20,389	3,129	35,226	18,903	5,548	83,194	.....	.....	.....	.....	12,161	95,355
September	19,433	....	31,834	11,900	6,200	69,367	.....	.....	.....	.....	4,800	74,167
October	9,065	4,677	42,065	12,000	9,677	77,484	.....	.....	.....	.....	4,097	81,581
November	18,900	3,167	41,667	14,699	3,767	82,200	.....	.....	.....	.....	2,400	84,600
December	12,968	....	46,129	13,613	7,225	79,935	.....	.....	.....	.....	2,335	82,290

AVERAGE DAILY IMPORTS OF PETROLEUM AT PRINCIPAL UNITED STATES PORTS

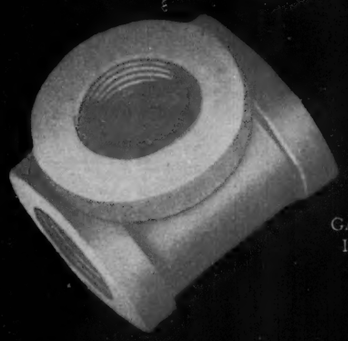
Average bbls. per day—	ATLANTIC PORTS						GULF COAST PORTS					
	Baltimore	Boston	New York	Philadelphia	Others	Total	Galveston	New Orleans Baton Rouge	Port Arthur Sabine Pass	Tampa	Total	Total all ports
March	18,548	26,064	145,516	39,162	28,162	257,452	....	42,581	2,322	....	44,903	302,355
April	19,733	18,367	137,233	50,267	22,567	248,167	6,867	25,066	10,367	1,500	43,800	291,967
May	29,806	19,258	138,000	49,936	22,322	259,322	6,677	26,323	3,000	1,323	37,323	296,645
June	31,433	8,667	134,600	42,967	18,300	235,967	8,600	22,633	11,800	2,033	45,066	281,033
July	40,097	15,129	111,677	43,420	31,516	241,839	4,774	12,097	9,516	161	26,548	268,387
August	33,387	14,355	162,644	30,936	20,355	261,677	4,226	12,742	....	1,484	18,452	280,129
September	32,967	9,000	136,633	54,300	32,900	265,800	6,900	22,900	5,367	1,333	36,500	302,300
October	39,936	10,519	137,096	38,160	38,644	264,355	6,613	13,388	11,064	4,419	35,484	299,839
November	23,633	18,900	125,200	41,100	28,200	237,033	2,233	12,533	6,667	2,500	23,933	260,966
December	29,774	15,387	133,742	31,000	23,775	233,678	5,548	16,484	6,613	1,774	30,419	264,097

GROSS PRODUCTION OF CRUDE OIL IN THE UNITED STATES FOR 12 MONTHS

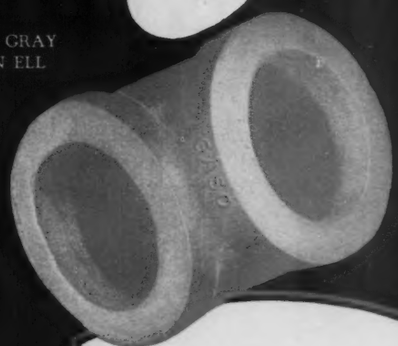
(In Barrels of 42 Gallons)

1929-30—		California	Oklahoma	Texas	Kansas	Arkansas	Louisiana	Rocky Mts.	Eastern	Total
January:	Month	23,385,939	22,575,874	23,412,226	2,861,641	2,453,526	1,807,887	2,076,070	3,439,000	82,012,163
	Daily average	754,385	728,254	755,233	92,311	79,146	58,318	66,970	110,936	2,645,554
February:	Month	22,300,707	20,464,164	20,816,209	2,557,968	2,154,194	1,569,930	1,965,656	3,113,000	74,941,828
	Daily average	796,454	730,863	743,484	91,356	76,936	56,068	70,202	111,184	2,676,494
March:	Month	24,324,729	20,838,262	24,358,592	2,951,076	2,303,734	1,756,153	2,195,823	3,586,000	82,314,369
	Daily average	784,669	672,202	785,761	95,196	74,314	56,650	70,838	115,677	2,655,302
April:	Month	23,295,060	20,235,390	23,493,097	3,112,740	2,188,680	1,702,497	2,085,030	3,524,000	79,636,494
	Daily average	776,502	674,513	783,102	103,758	72,956	56,750	69,501	117,467	2,654,550
May:	Month	24,053,351	21,345,453	24,489,101	3,665,099	2,220,158	1,713,261	2,252,522	3,879,000	83,617,945
	Daily average	775,915	688,563	789,965	118,229	71,618	55,267	72,262	125,129	2,697,353
June:	Month	24,624,627	20,561,112	24,698,029	3,636,150	2,112,270	1,699,581	2,180,752	3,887,000	83,399,521
	Daily average	820,821	685,371	823,267	121,205	70,337	56,653	72,692	129,567	2,779,984
July:	Month	26,796,627	22,371,925	26,969,989	3,867,157	2,137,047	1,716,488	2,360,836	4,439,000	90,659,069
	Daily average	864,407	721,675	869,997	124,747	68,937	55,370	76,156	143,200	2,924,486
August:	Month	27,233,353	22,429,522	27,491,362	3,816,555	2,086,083	1,764,973	2,478,016	4,363,000	91,662,864
	Daily average	878,495	723,532	.....	123,115	67,298	56,934	79,936	140,742	2,956,866
September:	Month	26,104,264	21,299,490	26,067,065	3,780,690	1,959,720	1,718,250	2,347,020	4,075,000	87,351,499
	Daily average	870,142	709,983	.....	126,023	65,324	57,275	78,234	135,917	2,911,716
October:	Month	26,895,160	20,821,646	26,412,167	3,429,468	2,000,027	1,956,326	2,392,952	4,482,000	88,389,746
	Daily average	867,586	671,666	852,004	110,628	64,517	63,107	77,192	141,358	2,851,282
November:	Month	21,317,540	19,193,760	24,896,034	3,430,560	1,911,060	1,853,565	2,350,110	4,029,000	78,981,629
	Daily average	710,585	639,798	.....	114,352	63,702	61,785	78,337	134,300	2,632,720
December:	Month	21,705,554	20,092,876	25,609,823	3,549,066	1,917,071	1,878,352	2,378,754	4,168,100	81,299,596
	Daily average	700,179	648,156	818,394	114,486	61,841	60,592	76,734	134,455	2,622,568
Total 12 months		292,036,911	252,229,474	298,713,694	40,658,170	25,443,570	21,137,263	27,063,541	46,984,100	1,004,266,723
Daily average		800,101	691,040	818,394	111,392	69,708	57,910	74,147	128,724	2,751,416

Fittings



GASO GRAY
IRON TEE



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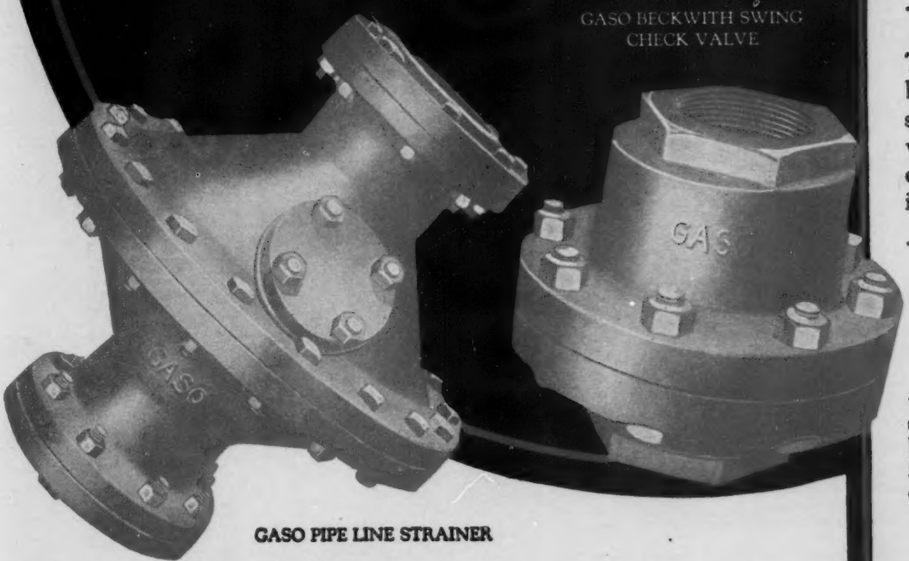
IRON ELL



GASO BECKWITH SWING
CHECK VALVE

GASO PIPE LINE STRAINER

You will like Gaso Fittings. They are made in Gaso shops by Gaso men under Gaso standards of workmanship—which is simply another way of saying absolute and unvarying dependability.

• • • The iron in Gaso Fittings is close-grained and free from imperfections—the machining, painstaking and carefully inspected. Every item in the Gaso line is unreservedly guaranteed.

• • • In addition to a large line of standard fittings, we are enabled by a modern pattern shop and foundry to quote on special requirements.

Our engineering department is at your service.

GASO PUMP & BURNER MFG. CO.

Tulsa • Oklahoma

Fort Worth, Texas
New York, N. Y.

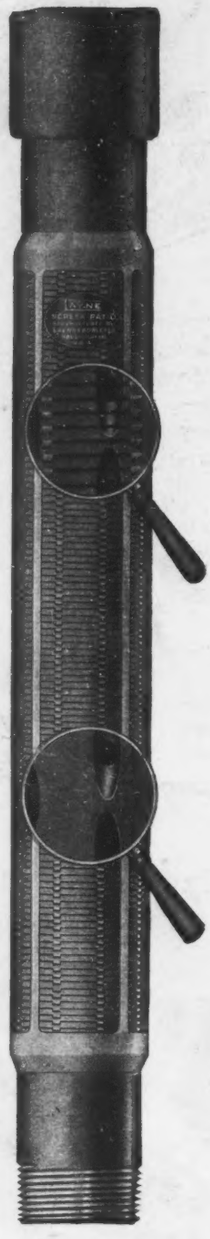
GASO PUMPS

for every oil industry need

Pittsburgh Testing Laboratory

Makes Elaborate Tests of The Strength and Safety of

THE LAYNE MILLED GROOVE SCREEN



This is the screen that has proven the sensational development of the industry during the past year.

TENSILE STENGTH

Tests made on 8 ft. 6 in. section of our regular Drilled and Milled Groove pipe (4¾ inches in diameter, 8 feet 6 inches long, and weighing 18 pounds per foot) without the Keystone Wire wrapping, which further strengthens. Results:

Specimen—	Load at Yield Point, pounds	Ultimate Load pounds	Avg. Wall Thickness inches	Avg. O.D. inches
Drilled pipe	186,800	310,750	.368	5.0014
Milled & drilled pipe	205,000	307,600	.382	5.005

End Compression or Collapsing Test

Made on 6-inch lengths cut from both the drilled and the milled and drilled pipe. Results:

Specimen—	Load at Yield Point, pounds	Ultimate Load pounds
Drilled pipe	140,950	407,200
Milled & drilled pipe	144,300	389,800

Side Compression or Collapsing Test

Made on full length (8 ft. 6 in.) of pipe with 6-inch saddle, which permitted load only over 6 inches of pipe. Results:

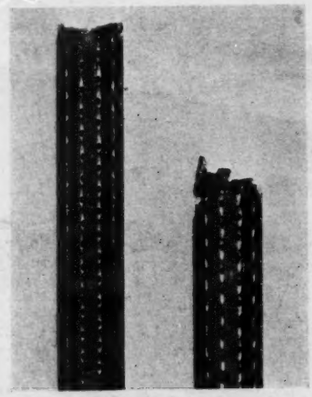
Specimen—	Load at Failure pounds
Drilled pipe	113,760
Milled & drilled pipe	108,000

"From the results of these tests, it is evident that the 'milling' operation has not seriously affected the strength of the pipe."
—*Statement by* J. W. REIFSNYDER, Engineer of Tests.

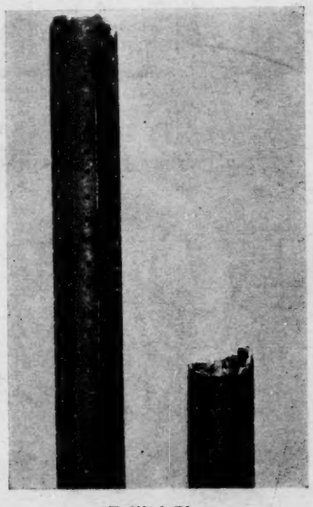
The above tests prove conclusively to those who do not already know by actual use that the improved Layne Milled Groove Screen has the necessary strength.

All who have used it know already that it does increase production.

By the above test, you can safely set this screen under more than 8,000 feet of drill pipe—safely.

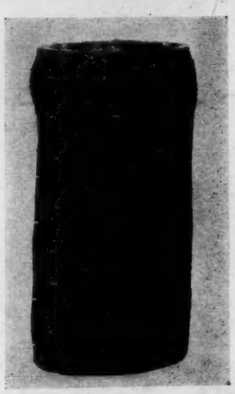


Milled Groove
Tensile Test

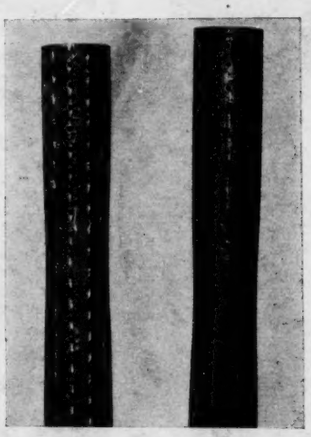


Drilled Pipe
Tensile Test

Milled Groove
End Compression Test



Drilled Pipe
End Compression Test



Milled Groove Drilled Pipe
Side Compression Test

The Layne & Bowler Co.

Houston THE LAYNE Texas

Increases Production

The Layne New York Co. 30 Church St., New York
The Layne & Bowler Corp. Los Angeles, Cal.
Vickers, Limited London, England